



Table of Contents

GRADE 5 • MODULE 2

Multi-Digit Whole Number and Decimal Fraction Operations

Module Overview	i
Topic A: Mental Strategies for Multi-Digit Whole Number Multiplication	2.A.1
Topic B: The Standard Algorithm for Multi-Digit Whole Number Multiplication...	2.B.1
Topic C: Decimal Multi-Digit Multiplication	2.C.1
Topic D: Measurement Word Problems with Whole Number and Decimal Multiplication	2.D.1
Topic E: Mental Strategies for Multi-Digit Whole Number Division.....	2.E.1
Topic F: Partial Quotients and Multi-Digit Whole Number Division.....	2.F.1
Topic G: Partial Quotients and Decimal Multi-Digit Division.....	2.G.1
Topic H: Measurement Word Problems with Multi-Digit Division.....	2.H.1
Module Assessments	2.S.1

Name _____ Date _____

1. Fill in the blanks using your knowledge of place value units and basic facts.

a. 23×20

Think: $23 \text{ ones} \times 2 \text{ tens} =$ _____ tens

$23 \times 20 =$ _____

d. 410×400

 $41 \text{ tens} \times 4 \text{ hundreds} = 164$ _____

$410 \times 400 =$ _____

b. 230×20

Think: $23 \text{ tens} \times 2 \text{ tens} =$ _____

$230 \times 20 =$ _____

e. $3,310 \times 300$

_____ tens \times _____ hundreds = 993 _____

$3,310 \times 300 =$ _____

c. 41×4

 $41 \text{ ones} \times 4 \text{ ones} = 164$ _____

$41 \times 4 =$ _____

f. 500×600

_____ hundreds \times _____ hundreds = 30 _____

$500 \times 600 =$ _____

2. Determine if these equations are true or false. Defend your answer using your knowledge of place value and the commutative, associative, and/or distributive properties.

a. $6 \text{ tens} = 2 \text{ tens} \times 3 \text{ tens}$

b. $44 \times 20 \times 10 = 440 \times 2$

c. $86 \text{ ones} \times 90 \text{ hundreds} = 86 \text{ ones} \times 900 \text{ tens}$

d. $64 \times 8 \times 100 = 640 \times 8 \times 10$

e. $57 \times 2 \times 10 \times 10 \times 10 = 570 \times 2 \times 10$

3. Find the products. Show your thinking. The first row gives some ideas for showing your thinking.

a.	7×9 $= 63$	7×90 $= 63 \times 10$ $= 630$	70×90 $= (7 \times 10) \times (9 \times 10)$ $= (7 \times 9) \times 100$ $= 6,300$	70×900 $= (7 \times 9) \times (10 \times 100)$ $= 63,000$
----	------------------------	--	--	--

b.	45×3	45×30	450×30	450×300
----	---------------	----------------	-----------------	------------------

c.	40×5	40×50	40×500	$400 \times 5,000$
----	---------------	----------------	-----------------	--------------------

d.	718×2	$7,180 \times 20$	$7,180 \times 200$	$71,800 \times 2,000$
----	----------------	-------------------	--------------------	-----------------------

4. Ripley told his mom that multiplying whole numbers by multiples of 10 was easy because you just count zeros in the factors and put them in the product. He used these two examples to explain his strategy.

$$\begin{array}{l} 7,000 \times 600 = 4,200,000 \\ (3 \text{ zeros}) \quad (2 \text{ zeros}) \quad (5 \text{ zeros}) \end{array}$$

$$\begin{array}{l} 800 \times 700 = 560,000 \\ (2 \text{ zeros}) \quad (2 \text{ zeros}) \quad (4 \text{ zeros}) \end{array}$$

- a. Ripley's mom said his strategy won't always work. Why not? Give an example.
5. The Canadian side of Niagara Falls has a flow rate of 600,000 gallons per second. How many gallons of water flow over the falls in 1 minute?
6. Tickets to a baseball game are \$20 for an adult and \$15 for a student. A school buys tickets for 45 adults and 600 students. How much money will the school spend for the tickets?

Name _____

Date _____

1. Fill in the blanks using your knowledge of place value units and basic facts.

a. 43×30

Think: 43 ones \times 3 tens = _____ tens

$43 \times 30 =$ _____

b. 430×30

Think: 43 tens \times 3 tens = _____ hundreds

$430 \times 30 =$ _____

c. 830×20

Think: 83 tens \times 2 tens = 166 _____

$830 \times 20 =$ _____

d. $4,400 \times 400$

_____ hundreds \times _____ hundreds = 176 _____

$4,400 \times 400 =$ _____

e. $80 \times 5,000$

_____ tens \times _____ thousands = 40 _____

$80 \times 5,000 =$ _____

2. Determine if these equations are true or false. Defend your answer using your knowledge of place value and the commutative, associative, and/or distributive properties.

a. 35 hundreds = 5 tens \times 7 tens

b. $770 \times 6 = 77 \times 6 \times 100$

c. 50 tens \times 4 hundreds = 40 tens \times 5 hundreds

d. $24 \times 10 \times 90 = 90 \times 2,400$

3. Find the products. Show your thinking. The first row gives some ideas for showing your thinking.

a.	5×5 $= 25$	5×50 $= 25 \times 10$ $= 250$	50×50 $= (5 \times 10) \times (5 \times 10)$ $= (5 \times 5) \times 100$ $= 2,500$	50×500 $= (5 \times 5) \times (10 \times 100)$ $= 25,000$
----	------------------------	--	--	--

b.	80×5	80×50	800×500	$8,000 \times 50$
----	---------------	----------------	------------------	-------------------

c.	637×3	$6,370 \times 30$	$6,370 \times 300$	$63,700 \times 300$
----	----------------	-------------------	--------------------	---------------------

4. A concrete stepping stone measures 20 inches square. What is the area of 30 such tiles?

5. A number is 42,300 when multiplied by 10. Find the product of this number and 500.

Name _____

Date _____

1. Round the factors to estimate the products.

a. $597 \times 52 \approx$ _____ \times _____ $=$ _____

A reasonable estimate for 597×52 is _____.

b. $1,103 \times 59 \approx$ _____ \times _____ $=$ _____

A reasonable estimate for $1,103 \times 59$ is _____.

c. $5,840 \times 25 \approx$ _____ \times _____ $=$ _____

A reasonable estimate for $5,840 \times 25$ is _____.

2. Complete the table using your understanding of place value and knowledge of rounding to estimate the product.

Factors	Rounded Factors	Estimate
a. $2,809 \times 42$	$3,000 \times 40$	120,000
b. $28,090 \times 420$		
c. $8,932 \times 59$		
d. 89 tens \times 63 tens		
e. 398 hundreds \times 52 tens		

3. For which of the following expressions would 200,000 be a reasonable estimate? Explain how you know.

$2,146 \times 12$

$21,467 \times 121$

$2,146 \times 121$

$21,477 \times 1,217$

4. Fill in the missing factors to find the given estimated product.

a. $571 \times 43 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 24,000$

b. $726 \times 674 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 490,000$

c. $8,379 \times 541 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 4,000,000$

5. There are 19,763 tickets available for a New York Knicks home game. If there are 41 home games in a season, about how many tickets are available for all the Knicks' home games?

6. Michael saves \$423 dollars a month for college.

a. About how much money will he have saved after 4 years?

b. Will your estimate be lower or higher than the actual amount Michael will save? How do you know?

Name _____

Date _____

1. Round the factors to estimate the products.

a. $697 \times 82 \approx$ _____ \times _____ $=$ _____

A reasonable estimate for 697×82 is _____.

b. $5,897 \times 67 \approx$ _____ \times _____ $=$ _____

A reasonable estimate for $5,897 \times 67$ is _____.

c. $8,840 \times 45 \approx$ _____ \times _____ $=$ _____

A reasonable estimate for $8,840 \times 45$ is _____.

2. Complete the table using your understanding of place value and knowledge of rounding to estimate the product.

Factors	Rounded Factors	Estimate
a. $3,409 \times 73$	$3,000 \times 70$	210,000
b. $82,290 \times 240$		
c. $9,832 \times 39$		
d. 98 tens \times 36 tens		
e. 893 hundreds \times 85 tens		

3. The estimated answer to a multiplication problem is 800,000. Which of the following expressions could result in this answer? Explain how you know.

$8,146 \times 12$

$81,467 \times 121$

$8,146 \times 121$

$81,477 \times 1,217$

4. Fill in the blank with the missing estimate.
- a. $751 \times 34 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 24,000$
- b. $627 \times 674 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 420,000$
- c. $7,939 \times 541 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = 4,000,000$
5. In a single season the New York Yankees sell an average of 42,362 tickets for each of their 81 home games. About how many tickets do they sell for an entire season of home games?
6. Raphael wants to buy a new car.
- a. He needs a down payment of \$3,000. If he saves \$340 each month, about how many months will it take him to save the down payment?
- b. His new car payment will be \$288 each month for five years. What is the total of these payments?

Name _____

Date _____




1. Draw a model. Then write the numerical expressions.

a. The sum of 8 and 7, doubled	b. 4 times the sum of 14 and 26
c. 3 times the difference between 37.5 and 24.5	d. The sum of 3 sixteens and 2 nines
e. The difference between 4 twenty-fives and 3 twenty-fives	f. Triple the sum of 33 and 27

2. Write the numerical expressions in words.

Expression	Words	The Value of the Expression
a. $12 \times (5 + 25)$		
b. $(62 - 12) \times 11$		
c. $(45 + 55) \times 23$		
d. $(30 \times 2) + (8 \times 2)$		

3. Compare the two expressions using $>$, $<$, or $=$. In the space beneath each pair of expressions, explain how you can compare without calculating. Draw a model if it helps you.

a. $24 \times (20 + 5)$		$(20 + 5) \times 12$
b. 18×27		20 twenty-sevens minus 1 twenty-seven
c. 19×9		3 nineteens, tripled

Name _____

Date _____

1. Draw a model then write the numerical expressions.

a. The sum of 21 and 4, doubled	b. 5 times the sum of 7 and 23
c. 2 times the difference between 49.5 and 37.5	d. The sum of 3 fifteens and 4 twos
e. The difference between 9 thirty-sevens and 8 thirty-sevens	f. Triple the sum of 45 and 55

2. Write the numerical expressions in words.

Expression	Words	The Value of the Expression
a. $10 \times (2.5 + 13.5)$		
b. $(98 - 78) \times 11$		
c. $(71 + 29) \times 26$		
d. $(50 \times 2) + (15 \times 2)$		

3. Compare the two expressions using $>$, $<$, or $=$. In the space beneath each pair of expressions, explain how you can compare without calculating. Draw a model if it helps you.

a. $93 \times (40 + 2)$	○	$(40 + 2) \times 39$
b. 61×25	○	60 twenty-fives minus 1 twenty-five

Name _____

Date _____

1. Circle each expression that is not equivalent to the expression in **bold**.

a. **16 × 29**

29 sixteens

$16 \times (30 - 1)$

$(15 - 1) \times 29$

$(10 \times 29) - (6 \times 29)$

b. **38 × 45**

$(38 + 40) \times (38 + 5)$

$(38 \times 40) + (38 \times 5)$

$45 \times (40 + 2)$

45 thirty-eights

c. **74 × 59**

$74 \times (50 + 9)$

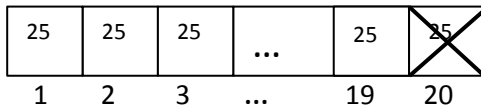
$74 \times (60 - 1)$

$(74 \times 5) + (74 \times 9)$

59 seventy-fours

2. Solve using mental math. Draw a tape diagram and fill in the blanks to show your thinking. The first one was done for you.

a. $19 \times 25 =$ _____ twenty-fives



Think: 20 twenty-fives – 1 twenty-five.

$$= (\text{_____} \times 25) - (\text{_____} \times 25)$$

$$= \text{_____} - \text{_____} = \text{_____}$$

b. $24 \times 11 =$ _____ twenty-fours

Think: _____ twenty fours + _____ twenty four

$$= (\text{_____} \times 24) + (\text{_____} \times 24)$$

$$= \text{_____} + \text{_____} = \text{_____}$$

<p>c. $79 \times 14 = \underline{\hspace{2cm}}$ fourteens</p> <p>Think: $\underline{\hspace{1cm}}$ fourteens – 1 fourteen</p> <p>$= (\underline{\hspace{1cm}} \times 14) - (\underline{\hspace{1cm}} \times 14)$</p> <p>$= \underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$</p>	<p>d. $21 \times 75 = \underline{\hspace{2cm}}$ seventy-fives</p> <p>Think: $\underline{\hspace{1cm}}$ seventy-fives + $\underline{\hspace{1cm}}$ seventy-five</p> <p>$= (\underline{\hspace{1cm}} \times 75) + (\underline{\hspace{1cm}} \times 75)$</p> <p>$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$</p>
--	--

3. Define the unit in word form and complete the sequence of problems as was done in Problems 3–4 in the lesson.

<p>a. $19 \times 15 = 19 \underline{\hspace{2cm}}$</p> <p>Think: 20 $\underline{\hspace{2cm}}$ – 1 $\underline{\hspace{2cm}}$</p> <p>$= (20 \times \underline{\hspace{1cm}}) - (1 \times \underline{\hspace{1cm}})$</p> <p>$= \underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$</p>	<p>b. $14 \times 15 = 14 \underline{\hspace{2cm}}$</p> <p>Think: 10 $\underline{\hspace{2cm}}$ + 4 $\underline{\hspace{2cm}}$</p> <p>$= (10 \times \underline{\hspace{1cm}}) + (4 \times \underline{\hspace{1cm}})$</p> <p>$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$</p>
<p>c. $25 \times 12 = 12 \underline{\hspace{2cm}}$</p> <p>Think: 10 $\underline{\hspace{2cm}}$ + 2 $\underline{\hspace{2cm}}$</p> <p>$= (10 \times \underline{\hspace{1cm}}) + (2 \times \underline{\hspace{1cm}})$</p> <p>$= \underline{\hspace{2cm}} + \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$</p>	<p>d. $18 \times 17 = 18 \underline{\hspace{2cm}}$</p> <p>Think: 20 $\underline{\hspace{2cm}}$ – 2 $\underline{\hspace{2cm}}$</p> <p>$= (20 \times \underline{\hspace{1cm}}) - (2 \times \underline{\hspace{1cm}})$</p> <p>$= \underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$</p>

4. How can 14×50 help you find 14×49 ?
5. Solve mentally.
- a. $101 \times 15 =$ _____
- b. $18 \times 99 =$ _____
6. Saleem says 45×32 is the same as $(45 \times 3) + (45 \times 2)$. Explain Saleem's error using words, numbers, and pictures.
7. Juan delivers 174 newspapers every day. Edward delivers 126 more newspapers each day than Juan.
- a. Write an expression to show how many newspapers Edward will deliver in 29 days.
- b. Use mental math to solve. Show your thinking.

Name _____

Date _____

1. Circle each expression that is not equivalent to the expression in **bold**.

a. **37×19**

37 nineteens

$(30 \times 19) - (7 \times 29)$

$37 \times (20 - 1)$

$(40 - 2) \times 19$

b. **26×35**

35 twenty-sixes

$(26 + 30) \times (26 + 5)$

$(26 \times 30) + (26 \times 5)$

$35 \times (20 + 60)$

c. **34×89**

$34 \times (80 + 9)$

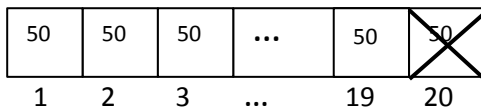
$(34 \times 8) + (34 \times 9)$

$34 \times (90 - 1)$

89 thirty-fours

2. Solve using mental math. Draw a tape diagram and fill in the blanks to show your thinking. The first one was done for you.

a. $19 \times 50 =$ _____ fifties



Think: 20 fifties – 1 fifties

$$= (\text{_____} \times 50) - (\text{_____} \times 50)$$

$$= \text{_____} - \text{_____} = \text{_____}$$

b. $11 \times 26 =$ _____ twenty-sixes

Think: _____ twenty-sixes + _____ twenty-sixes

$$= (\text{_____} \times 26) + (\text{_____} \times 26)$$

$$= \text{_____} + \text{_____} = \text{_____}$$

<p>c. $49 \times 12 =$ _____ twelves</p> <p>Think: _____ twelves – 1 twelves</p> <p>$=$ (_____ \times 12) – (_____ \times 12)</p> <p>$=$ _____ – _____ $=$ _____</p>	<p>d. $12 \times 25 =$ _____ seventy-fives</p> <p>Think: _____ twenty-fives + _____ twenty-fives</p> <p>$=$ (_____ \times 25) + (_____ \times 25)</p> <p>$=$ _____ + _____ $=$ _____</p>
--	--

3. Define the unit in word form and complete the sequence of problems as was done in Problems 3–4 in the lesson.

<p>a. $29 \times 12 = 29$ _____</p> <p>Think: 30 _____ – 1 _____</p> <p>$= 30 \times$ (_____) – (1 \times _____)</p> <p>$=$ _____ – _____ $=$ _____</p>	<p>b. $11 \times 31 = 31$ _____</p> <p>Think: 30 _____ + 1 _____</p> <p>$= (30 \times$ _____) + (1 \times _____)</p> <p>$=$ _____ + _____ $=$ _____</p>
<p>c. $19 \times 11 = 19$ _____</p> <p>Think: 20 _____ – 1 _____</p> <p>$= (20 \times$ _____) – (1 \times _____)</p> <p>$=$ _____ – _____ $=$ _____</p>	<p>d. $50 \times 13 = 13$ _____</p> <p>Think: 10 _____ + 3 _____</p> <p>$= (10 \times$ _____) + (3 \times _____)</p> <p>$=$ _____ – _____ $=$ _____</p>

4. How can 12×50 help you find 12×49 ?
5. Solve mentally.
- a. $16 \times 99 =$ _____
- b. $20 \times 101 =$ _____
6. Joy is helping her father to build a deck that measures 14 ft by 19 ft. Find the area of the deck using a mental strategy. Explain your thinking.
7. The Lason School turns 101 years old in June. In order to celebrate, they ask each of the 23 classes to collect 101 items and make a collage. How many total items will be in the collage? Use mental math to solve. Explain your thinking.

Name _____

Date _____

1. Draw an area model and then solve using the standard algorithm. Use arrows to match the partial products from the area model to the partial products of the algorithm.

a. 34×21

$$\begin{array}{r} 34 \\ \times 21 \\ \hline \end{array}$$

b. 434×21

$$\begin{array}{r} 434 \\ \times 21 \\ \hline \end{array}$$

2. Solve using the standard algorithm.

a. $431 \times 12 = \underline{\hspace{2cm}}$

b. $123 \times 23 = \underline{\hspace{2cm}}$

c. $312 \times 32 = \underline{\hspace{2cm}}$

3. Betty saves \$161 a month. She saved \$141 less each month than Jack. How much will Jack save in 2 years?
4. Farmer Brown feeds 12.1 kg of alfalfa to each of his 2 horses daily. How many kilograms of alfalfa will all his horses have eaten after 21 days? Draw an area model to solve.

Name _____

Date _____

1. Draw an area model then solve using the standard algorithm. Use arrows to match the partial products from the area model to the partial products in the algorithm.

a. $24 \times 21 =$ _____

$$\begin{array}{r} 24 \\ \times 21 \\ \hline \end{array}$$

b. $242 \times 21 =$ _____

$$\begin{array}{r} 242 \\ \times 21 \\ \hline \end{array}$$

2. Solve using the standard algorithm.

a. $314 \times 22 =$ _____

b. $413 \times 22 =$ _____

c. $213 \times 32 =$ _____

3. A young snake measures 0.23 m long. During the course of his lifetime, he will grow to be 13 times his current length. What will his length be when he's full grown?
4. Zenin earns \$142 per shift at his new job. During a pay period, he works 12 shifts. What would his pay be for that period?

Name _____

Date _____

1. Draw an area model, and then solve using the standard algorithm. Use arrows to match the partial products from your area model to the partial products in the algorithm.

a. 48×35

$$\begin{array}{r} 48 \\ \times 35 \\ \hline \end{array}$$

b. 648×35

$$\begin{array}{r} 648 \\ \times 35 \\ \hline \end{array}$$

2. Solve using the standard algorithm.

a. 758×92

c. 476×65

b. 958×94

d. 547×64

3. Carpet costs \$16 a square foot. A rectangular floor is 14 feet long by 16 feet wide. How much would it cost to carpet the floor?
4. General admission to The American Museum of Natural History is \$19.
- a. If a group of 125 students visits the museum, how much will the group's tickets cost?
- b. If the group also purchases IMAX movie tickets for an additional \$4 per student, what is the new total cost of all the tickets? Write an expression that shows how you calculated the new price.

Name _____

Date _____

1. Draw an area model, and then solve using the standard algorithm. Use arrows to match the partial products from your area model to the partial products in the algorithm.

a. $27 \times 36 =$ _____

$$27$$

$$\times 36$$

b. $527 \times 36 =$ _____

$$527$$

$$\times 36$$

2. Solve using the standard algorithm.

a. 649×53

c. 758×46

b. 496×53

d. 529×48

3. Each of the 25 students in Mr. McDonald's class sold 16 raffle tickets. If each ticket cost \$15, how much money did Mr. McDonald's students raise?
4. Jayson buys a car and pays by installments. Each installment is \$567 per month. After 48 months, Jayson owes \$1250. What was the total price of the vehicle?

Name _____

Date _____

1. Draw an area model, and then solve using the standard algorithm. Use arrows to match the partial products from the area model to the partial products in the algorithm.

a. 481×352

$$\begin{array}{r} 481 \\ \times 352 \\ \hline \end{array}$$

b. 481×302

$$\begin{array}{r} 481 \\ \times 302 \\ \hline \end{array}$$

- c. Both 1(a) and 1(b) have three-digit multipliers. Why are there three partial products in 1(a) and only two partial products in 1(b)?

2. Solve by drawing the area model and using the standard algorithm.

a. $8,401 \times 305$

$$8,401$$

$$\times \underline{305}$$

b. $7,481 \times 350$

$$7,481$$

$$\times \underline{350}$$

3. Solve using the standard algorithm.

a. 346×27

c. 346×207

b. $1,346 \times 297$

d. $1,346 \times 207$

4. A school district purchased 615 new laptops for their mobile labs. Each computer cost \$409. What's the total cost for all of the laptops?
5. A publisher prints 1,512 copies of a book in each print run. If they print 305 runs, how many books will be printed?
6. As of the 2010 census, there were 3,669 people living in Marlboro, New York. Brooklyn, New York, has 681 times as many people. How many more people live in Brooklyn than in Marlboro?

Name _____

Date _____

1. Draw an area model, and then solve using the standard algorithm. Use arrows to match the partial products from your area model to the partial products in your algorithm.

a. $273 \times 346 =$ _____

$$\begin{array}{r} 273 \\ \times 346 \\ \hline \end{array}$$

b. $273 \times 306 =$ _____

$$\begin{array}{r} 273 \\ \times 306 \\ \hline \end{array}$$

- c. Both Parts (a) and (b) have three-digit multipliers. Why are there three partial products in (a) and only two partial products in (b)?

2. Solve by drawing the area model and using the standard algorithm.
- a. $7,481 \times 290 =$ _____
- b. $7,018 \times 209 =$ _____
3. Solve using the standard algorithm.
- a. 426×357
- c. 426×307
- b. $1,426 \times 357$
- d. $1,426 \times 307$
4. The Hudson Valley Renegades Stadium holds a maximum of 4,505 people. During the heights of their popularity, they sold out 219 consecutive games. How many tickets were sold during this time?
5. At the farmer's market, each of the 94 vendors makes \$502 in profit each weekend. How much profit will all vendors make on Saturday?

Name _____

Date _____

1. Estimate the product first. Solve by using the standard algorithm. Use your estimate to check the reasonableness of the product.

<p>a. 213×328</p> <p>$\approx 200 \times 300$ $= 60,000$</p> <p style="margin-left: 40px;"> $\begin{array}{r} 213 \\ \times 328 \\ \hline \end{array}$ </p>	<p>b. 662×372</p>	<p>c. 739×442</p>
<p>d. 807×491</p>	<p>e. $3,502 \times 656$</p>	<p>f. $4,390 \times 741$</p>
<p>g. $530 \times 2,075$</p>	<p>h. $4,004 \times 603$</p>	<p>i. $987 \times 3,105$</p>

2. Each container holds 1 L 275 mL of water. How much water is in 609 identical containers? Find the difference between your estimated product and precise product.
3. A club had some money to purchase new chairs. After buying 355 chairs at \$199 each, there was \$1,068 remaining. How much money did the club have at first?
4. So far, Carmella has collected 14 boxes of baseball cards. Each box has 315 cards in it. Carmella estimates that she has about 3,000 cards, so she buys 6 albums that hold 500 cards each.
- a. Will the albums have enough space for all of her cards? Why or why not?
- b. How many cards does Carmella have?
- c. How many albums will she need for all of her baseball cards?

Name _____

Date _____

1. Estimate the product first. Solve by using the standard algorithm. Use your estimate to check the reasonableness of the product.

<p>a. 312×149</p> <p>$\approx 300 \times 100$ $= 30,000$</p> <p style="text-align: center;"> $\begin{array}{r} 312 \\ \times 149 \\ \hline \end{array}$ </p>	<p>b. 743×295</p>	<p>c. 428×637</p>
<p>d. 691×305</p>	<p>e. $4,208 \times 606$</p>	<p>f. $3,068 \times 523$</p>
<p>g. $430 \times 3,064$</p>	<p>h. $3,007 \times 502$</p>	<p>i. $254 \times 6,104$</p>

2. When multiplying 1,729 times 308, Clayton got a product of 53,253. Without calculating, does his product seem reasonable? Explain your thinking.
3. A publisher prints 1,912 copies of a book in each print run. If they print 305 runs, the manager wants to know about how many books will be printed. What's a reasonable estimate?

Name _____

Date _____

Solve.

1. An office space in New York City measures 48 feet by 56 feet. If it sells for \$565 per square foot, what is the total cost of the office space?

2. Gemma and Leah are both jewelry makers. Gemma made 106 beaded necklaces. Leah made 39 more necklaces than Gemma.
 - a. Each necklace they make has exactly 104 beads on it. How many beads did both girls use altogether while making their necklaces?

 - b. At a recent craft fair, Gemma sold each of her necklaces for \$14. Leah sold each of her necklaces for 10 dollars more. Who made more money at the craft fair? How much more?

3. Peng bought 26 treadmills for her new fitness center at \$1,334 each. Then she bought 19 stationary bikes for \$749 each. How much did she spend on her new equipment? Write an expression, and then solve.

4. A Hudson Valley farmer has 26 employees. He pays each employee \$410 per week. After paying his workers for one week, the farmer has \$162 left in his bank account. How much money did he have at to begin with?
5. Frances is sewing a border around 2 rectangular tablecloths that each measure 9 feet long by 6 feet wide. If it takes her 3 minutes to sew on 1 inch of border, how many minutes will it take her to complete her sewing project? Write an expression, and then solve.
6. Each grade level at Hooperville Schools has 298 students.
- If there are 13 grade levels, how many students attend Hooperville Schools?
 - A nearby district, Willington, is much larger. They have 12 times as many students. How many students attend schools in Willington?

Name _____

Date _____

Solve.

1. Jeffery bought 203 sheets of stickers. Each sheet has a dozen stickers. He gave away 907 stickers to his family and friends on Valentine's Day. How many stickers does Jeffery have remaining?

2. During the 2011 season, a quarterback passed for 302 yards per game. He played in all 16 regular season games that year.
 - a. How many total yards did the quarterback pass for?

 - b. If he matches this passing total for each of the next 13 seasons, how many yards will he pass for in his career?

3. Bao saved \$179 a month. He saved \$145 less than Ada each month. How much would Ada save in three and a half years?

4. Mrs. Williams is knitting a blanket for her newborn granddaughter. The blanket is 2.25 meters long and 1.8 meters wide. What is the area of the blanket? Write the answer in centimeters.
5. Use the chart to solve.

Soccer Field Dimensions

	FIFA Regulation (in yards)	New York State High Schools (in yards)
Minimum Length	110	100
Maximum Length	120	120
Minimum Width	70	55
Maximum Width	80	80

- a. Write an expression to find the difference in the maximum area and minimum area of a NYS high school soccer field. Then evaluate your expression.
- b. Would a field with a width of 75 yards and an area of 7,500 square yards be within FIFA regulation? Why or why not?
- c. It costs \$26 to fertilize, water, mow, and maintain each square yard of a full size FIFA field (with maximum dimensions) before each game. How much will it cost to prepare the field for next week's match?

Name _____

Date _____

1. Estimate the product. Solve using an area model and the standard algorithm. Remember to express your products in standard form.

a. $22 \times 2.4 \approx \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

24 (tenths)

$$\begin{array}{r} \times 22 \\ \hline \end{array}$$

b. $3.1 \times 33 \approx \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

31 (tenths)

$$\begin{array}{r} \times 33 \\ \hline \end{array}$$

2. Estimate, and then use the standard algorithm to solve. Express your products in standard form.

a. $3.2 \times 47 \approx \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

b. $3.2 \times 94 \approx \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

32 (tenths)

$$\begin{array}{r} \times 47 \\ \hline \end{array}$$

32 (tenths)

$$\begin{array}{r} \times 94 \\ \hline \end{array}$$

c. 6.3×44

d. 14.6×17

e. 8.2×34

f. 160.4×17

3. Michelle multiplied 3.4×52 . She incorrectly wrote 1,768 as her product. Use words, numbers, and pictures to explain Michelle's mistake.
4. A wire is bent to form a square with a perimeter of 16.4 cm. How much wire would be needed to form 25 such squares? Express your answer in meters.

Name _____

Date _____

1. Estimate the product. Solve using an area model and the standard algorithm. Remember to express your products in standard form.

a. $53 \times 1.2 \approx \underline{\quad} \times \underline{\quad} = \underline{\quad}$

12 (tenths)

$$\begin{array}{r} \times 53 \\ \hline \end{array}$$

b. $2.1 \times 82 \approx \underline{\quad} \times \underline{\quad} = \underline{\quad}$

21 (tenths)

$$\begin{array}{r} \times 82 \\ \hline \end{array}$$

2. Estimate, and then use the standard algorithm to solve. Express your products in standard form.

a. $4.2 \times 34 \approx \underline{\quad} \times \underline{\quad} = \underline{\quad}$

42 (tenths)

$$\begin{array}{r} \times 34 \\ \hline \end{array}$$

b. $65 \times 5.8 \approx \underline{\quad} \times \underline{\quad} = \underline{\quad}$

58 (tenths)

$$\begin{array}{r} \times 65 \\ \hline \end{array}$$

c. 3.3×16

d. 15.6×17

e. 73×2.4

f. 193.5×57

3. Mr. Jansen is building an ice rink in his backyard that will measure 8.4 meters by 22 meters. What is the area of the rink?
4. Rachel runs 3.2 miles each week day and 1.5 miles each day of the weekend. How many miles will she have run in 6 weeks?

Name _____

Date _____

1. Estimate the product. Solve using the standard algorithm. Use the thought bubbles to show your thinking. (Draw an area model on a separate sheet if it helps you.)

a. $1.38 \times 32 \approx$ _____ \times _____ $=$ _____

b. $3.55 \times 89 \approx$ _____ \times _____ $=$ _____

Think: 138
(1.38×100)

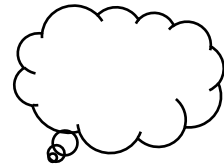
1.38
 $\times 32$

3.55
 $\times 89$

$1.38 \times 32 =$ _____

Think! 4416 is 100 times too large! What is the real product?

$3.55 \times 89 =$ _____



2. Solve using the standard algorithm.

a. 5.04×8

b. 147.83×67

c. 83.41×504

d. 0.56×432

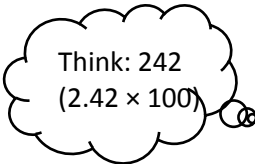
3. Use the whole number product and place value reasoning to place the decimal point in the second product. Explain how you know.
- a. If $98 \times 768 = 75,264$ then $98 \times 7.68 =$ _____
- b. If $73 \times 1,563 = 114,099$ then $73 \times 15.63 =$ _____
- c. If $46 \times 1,239 = 56,994$ then $46 \times 123.9 =$ _____
4. Jenny buys 22 pens that cost \$1.15 each and 15 markers that cost \$2.05 each. How much will Jenny spend?
5. A living room measures 24 feet by 15 feet. An adjacent square dining room measures 13 feet on each side. If carpet costs \$6.98 per square foot, what is the total cost of putting carpet in both rooms?

Name _____

Date _____

1. Estimate the product. Solve using the standard algorithm. Use the thought bubbles to show your thinking. (Draw an area model on a separate sheet if it helps you.)

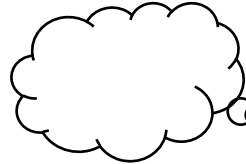
a. $2.42 \times 12 \approx \underline{\quad} \times \underline{\quad} = \underline{\quad}$



Think: 242
(2.42×100)

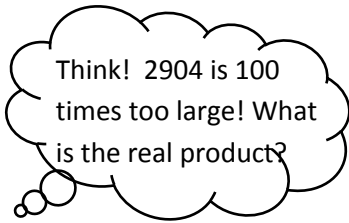
$$\begin{array}{r} 2.42 \\ \times 12 \\ \hline \end{array}$$

b. $4.13 \times 37 \approx \underline{\quad} \times \underline{\quad} = \underline{\quad}$



$$\begin{array}{r} 4.13 \\ \times 37 \\ \hline \end{array}$$

$2.42 \times 12 = \underline{\hspace{2cm}}$



Think! 2904 is 100 times too large! What is the real product?

$4.13 \times 37 = \underline{\hspace{2cm}}$



2. Solve using the standard algorithm.

a. 2.03×13

c. 371.23×53

b. 53.16×34

d. 1.57×432

3. Use the whole number product and place value reasoning to place the decimal point in the second product. Explain how you know.
- a. If $36 \times 134 = 4,824$ then $36 \times 1.34 =$ _____
- b. If $84 \times 2,674 = 224,616$ then $84 \times 26.74 =$ _____
- c. $19 \times 3,211 = 61,009$ then $321.1 \times 19 =$ _____
4. A slice of pizza costs \$1.57. How much does 27 slices cost?
5. A spool of ribbon holds 6.75 meters. If the craft club buys 21 spools:
- a. What is the total cost if the ribbon sells for \$2 per meter?
- b. If the club uses 76.54 meters to complete a project, how much ribbon will be left?

Name _____ Date _____

1. Estimate, and then solve using the standard algorithm. You may draw an area model if it helps you.

a. $1.21 \times 14 \approx \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

b. $2.45 \times 305 \approx \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

2. Estimate, and then solve using the standard algorithm. Use a separate sheet to draw the area model if it helps you.

a. 1.23×12

b. 1.3×26

c. 0.23×14

d. 0.45×26

e. 7.06×28

f. 6.32×223

g. 7.06×208

h. 151.46×555

3. Denise walks on the beach every afternoon. In the month of July she walked 3.45 miles each day. How far did Denise walk during the month of July?
4. A gallon of gas costs \$4.34. Greg puts 12 gallons of gas in his car. He has a 50-dollar bill. Tell how much money Greg will have left, or how much more money he will need. Show all your calculations.
5. Seth drinks a glass of orange juice every day that contains 0.6 grams of Vitamin C. He eats a serving of strawberries for snack after school every day that contains 0.35 grams of Vitamin C. How many grams of Vitamin C does Seth consume in 3 weeks?

Name _____

Date _____

1. Estimate, and then solve using the standard algorithm. You may draw an area model if it helps you.

a. $24 \times 2.31 \approx \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

$$\begin{array}{r} 2.31 \\ \times 24 \\ \hline \end{array}$$

b. $5.42 \times 305 \approx \underline{\hspace{1cm}} \times \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$

$$\begin{array}{r} 5.42 \\ \times 305 \\ \hline \end{array}$$

2. Estimate, and then solve using the standard algorithm. Use a separate sheet to draw the area model if it helps you.

a. 1.23×21

b. 3.2×41

c. 0.32×41

d. 0.54×62

e. 6.09×28

f. 6.83×683

g. 6.09×208

h. 171.76×555

3. Eric walks 2.75 miles to and from work every day for an entire year. How many miles did he walk?
4. Art galleries often price paintings by the square inch. If a painting measures 22.5 inches by 34 inches and costs \$4.15 per square inch, what is the selling price for the painting?
5. Gerry spends \$1.25 each day on lunch at school. On Fridays she buys an extra snack for \$0.55. How much money will she spend in two weeks?

Name _____

Date _____

1. Complete the chart below with the measurement equivalents.

Feet	Inches
1	
2	
3	
4	
10	
12	
40	
45	
120	

Centimeters	Meters
	1
	2
	3
	4
	10
	12
	40
	45
	120

2. Explain how to convert feet to inches. Draw a number line or tape diagram to support your explanation.

3. Explain how to convert meters to centimeters. Draw a number line or tape diagram to support your explanation.

4. Convert. Use your Reference Sheet to remind you of the conversion factors. Show your work.
- a. 27 ft = _____ in d. 7 kg = _____ g g. 3 km 85 m = _____ m
- b. _____ oz = 54 lb e. 4 mi = _____ yd = _____ ft h. 2 qt = _____ pt = _____ fl oz
- c. _____ pt = 21 qt f. _____ L = 9 kL i. _____ oz = 24 lb 15 oz
5. Emily's pet snake is 5 feet long. Kristen's snake is 50 inches long. Kristen says her snake is much longer because 50 is so much bigger than 5. Is Kristen right? Why or why not?
6. Ben helps his dad make chicken soup. Their recipe makes 15 cups of soup. If they each eat 2 cups and freeze the rest, will the leftovers fit in a 64-ounce container?

Name _____

Date _____

1. Complete the chart below with the measurement equivalents.

Liters	Milliliters
1	
2	
3	
4	
10	
15	
30	
100	

Quarts	Gallons
	1
	2
	3
	4
	10
	15
	30
	100

2. Convert.

a. 18 yd = _____ ft

d. 72 kl = _____ L

g. 5 km 14 m = _____ m

b. _____ oz = 23 lb

e. 2 mi = _____ yd = _____ ft

h. 31 gal = _____ qt = _____ pt

c. _____ cm = 64 m

f. _____ g = 35 kg

i. _____ fl oz = 56 c

3. Jesse needs 13 gallons of paint to finish painting the exterior of his barn. If he uses 10 quarts of the paint for the doors, how many quarts will be left for the siding on the barn?

4. Ms. Lane's laptop stays on for 6 hours without being plugged in, and Mr. Trevor's laptop stays powered for 400 minutes. Whose laptop lasts longer?

5. The food pantry distributes 10-oz bags of rice. If three 5-lb bags are donated to the pantry, how many 10-ounce bags can be made?

Name _____

Date _____

1. Convert. Use your Reference Sheet to help you remember the conversion factors.

a. $4.5 \text{ km} = \underline{\hspace{2cm}} \text{ m}$

d. $8.25 \text{ g} = \underline{\hspace{2cm}} \text{ mg}$

g. $0.5 \text{ mi} = \underline{\hspace{2cm}} \text{ ft}$

b. $\underline{\hspace{2cm}} \text{ fl oz} = 2.75 \text{ c}$

e. $3.25 \text{ gal} = \underline{\hspace{2cm}} \text{ qt}$

h. $7.9 \text{ m} = \underline{\hspace{2cm}} \text{ cm}$

c. $\underline{\hspace{2cm}} \text{ mL} = 4.85 \text{ L}$

f. $\underline{\hspace{2cm}} \text{ pt} = 16.5 \text{ qt}$

i. $\underline{\hspace{2cm}} \text{ oz} = 4.5 \text{ lb}$

2. Cassidy figured out that she makes \$0.75 every minute at her job. She works 7 hours 15 minutes every day.

a. How many minutes does she work in 4 days?

b. How much will Cassidy earn in 4 days?

3. Emma can't believe how huge the Statue of Liberty is. She finds more information about Lady Liberty. Help Emma fill in the rest of the chart and then answer the questions.

The Statue of Liberty's	CUSTOMARY UNITS		METRIC UNITS	
	Feet	Inches	Meters	Centimeters
Nose	4 ft 6 in		1.37 m	
Index Finger	8 ft		2.44 m	
Head	17ft 3 in		5.26 m	
Eye	2 ft 6 in		0.76 m	

Source: <http://www.nps.gov/stli/historyculture/statue-statistics.htm>

- a. Emma is 52 inches tall. Which of Lady Liberty's body parts above is the closest to Emma's height? What is the difference between these two measurements in inches?

- b. Emma's eye is 4 cm wide. How many of Emma's eyes lined up end to end would it take to stretch all the way across one of Lady Liberty's eyes?

- c. The length of Emma's neighborhood block is 0.19 km. About how many of the statue's heads would it take to cover the length of her block?

- d. Measured in meters, Lady Liberty's index finger is 4 times as long as Emma's leg. What is the length of Emma's leg in meters?

Name _____

Date _____

1. Convert. Use your Reference Sheet if necessary.

a. $2.7 \text{ kL} = \underline{\hspace{2cm}} \text{ L}$

d. $9.13 \text{ kg} = \underline{\hspace{2cm}} \text{ g}$

g. $1.3 \text{ tons} = \underline{\hspace{2cm}} \text{ lb}$

b. $\underline{\hspace{2cm}} \text{ fl oz} = 4.25 \text{ c}$

e. $4.75 \text{ gal} = \underline{\hspace{2cm}} \text{ qt}$

h. $0.75 \text{ mi} = \underline{\hspace{2cm}} \text{ yd}$

c. $\underline{\hspace{2cm}} \text{ m} = 1.45 \text{ km}$

f. $\underline{\hspace{2cm}} \text{ pt} = 12.5 \text{ qt}$

i. $\underline{\hspace{2cm}} \text{ oz} = 8.5 \text{ lb}$

2. Jennifer wants to convert 7.85 meters to centimeters, but she does not have paper, pencil, or a calculator. Describe a method she can use.

3. A standard hot tub holds 2.3 kiloliters of water. After filling up two of nine hot tubs, Johnson's water service truck empties. How many liters of water are still needed to fill the remaining tubs?

Name _____

Date _____

Solve.

1. Liza's cat had six kittens! When Liza and her brother weigh all the kittens together, they weigh 4 pounds 2 ounces. Since all the kittens are about the same size, how many ounces does each kitten weigh?

2. Holly is buying orange juice for the class party. There are 24 people coming, and she figures each person will drink 1.75 cups.
 - a. How many fluid ounces of juice will she need?

 - b. If she buys five 59-ounce containers, will she have enough juice?

3. Josie is 1.4 m tall. Her sister is 54 cm shorter.
 - a. Find Josie's sister's height in meters.

 - b. How tall are Josie and her sister combined, in meters?

4. A crane operator unloaded the following cargo:
- 5 pallets of lumber. Each pallet weighs 7.3 tons.
 - 9 pallets of concrete. Each pallet weighs 4.8 tons.
- a. How many pounds of cargo were unloaded?
- b. Which load of cargo was heavier, the lumber or the concrete? How many pounds heavier?
5. A punch recipe calls for 2 quarts of ginger ale, 3 pints of orange juice, 2 pints of pineapple juice, 1 cup of lemon juice, and 3 ounces of lime juice. Edna plans to make a double-recipe. How many fluid ounces will there be in a double-recipe of punch?

6. Use the table below to answer the questions that follow.

TOWN OF WAPPINGERS FALLS Distances from Akun's House	
Location	Distance
Cibo Deli	2.5 miles
W.F. Library	15,840 feet
Elementary School	5,280 yards
Youth Ball Field	1 mile 880 yards

- a. If Akun travels from his house to the Youth Ball Field and back, how many miles did he travel?
- b. Which two locations are equidistant from Akun's house?
- c. Three days a week, Akun walks to school. After school, the bus drops him off at the library to do his homework. He walks home afterwards. How far, in feet, does Akun walk on those three days?

4. A Rottweiler gave birth to 3 puppies. The first puppy weighed 5.1 kg. The second weighed 206 g less than the first. The third puppy weighed 0.2 kg more than the second.
- What is the total weight of the litter in grams?
 - How much more did the heaviest puppy weight than the lightest one?
 - The mother weighed 4 times the total weight of her litter. What was her weight in kilograms?
5. A courier charges \$6.25 to ship a 2 lb-package. For each ounce over 2 lb, they charge an additional \$0.35 per ounce.
- How much would it cost to ship a package weighing 4 lb 6 oz?
 - Which would be less expensive? Sending two packages weighing 2 lb 4 oz each, or combining them into one package weighing 4 lb 8 oz? What is the difference in price?

Name _____

Date _____

1. Divide. Draw number disks to show your thinking for (a) and (c). You may draw disks on your personal white board to solve the others if necessary.

a. $500 \div 10$	b. $360 \div 10$
c. $12,000 \div 100$	d. $450,000 \div 100$
e. $700,000 \div 1,000$	f. $530,000 \div 100$

2. Divide. The first one is done for you.

a. $12,000 \div 30$ = $12,000 \div 10 \div 3$ = $1,200 \div 3$ = 400	b. $12,000 \div 300$	c. $12,000 \div 3,000$
d. $560,000 \div 70$	e. $560,000 \div 700$	f. $560,000 \div 7,000$

g. $28,000 \div 40$	h. $450,000 \div 500$	i. $810,000 \div 9,000$
---------------------	-----------------------	-------------------------

3. The floor of a rectangular banquet hall has an area of $3,600 \text{ m}^2$. The length is 90 m.
- What is the width of the banquet hall?

 - A square banquet hall has the same area. What is its length?

 - A third rectangular banquet hall has a perimeter of 3,600 m. What is the width if the length is 5 times the width?

4. Two fifth graders solved $400,000 \div 800$. Carter said the answer is 500, while Kim said the answer is 5,000.
- a. Who has the correct answer? Explain your thinking.
- b. What if the problem is $4,000,000 \div 8,000$? What is the quotient?

Name _____

Date _____

1. Divide. Draw number disks to show your thinking for (a) and (c). You may draw disks on your personal white board to solve the others if necessary.

a. $300 \div 10$	b. $450 \div 10$
c. $18,000 \div 100$	d. $730,000 \div 100$
e. $900,000 \div 1,000$	f. $680,000 \div 1,000$

2. Divide. The first one is done for you.

a. $18,000 \div 20$ = $18,000 \div 10 \div 2$ = $1,800 \div 2$ = 900	b. $18,000 \div 200$	c. $18,000 \div 2,000$
d. $420,000 \div 60$	e. $420,000 \div 600$	f. $420,000 \div 6,000$

g. $24,000 \div 30$	h. $560,000 \div 700$	i. $450,000 \div 9,000$
---------------------	-----------------------	-------------------------

3. A stadium holds 50,000 people. The stadium is divided into 250 different seating sections. How many seats are in each section?
4. Over the course of a year, a tractor-trailer commutes 160,000 miles across America.
- Assuming a trucker changes his tires every 40,000 miles, and that he starts with a brand new set of tires, how many sets of tires will he use in a year?
 - If the trucker changes the oil every 10,000 miles and he starts the year with a fresh oil change, how many times will he change the oil in a year?

Name _____

Date _____

1. Estimate the quotient for the following problems. Round the divisor first.

<p>a. $609 \div 21$</p> <p>$\approx 600 \div 20$</p> <p>$= 30$</p>	<p>b. $913 \div 29$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>	<p>c. $826 \div 37$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>
<p>d. $141 \div 73$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>	<p>e. $241 \div 58$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>	<p>f. $482 \div 62$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>
<p>g. $656 \div 81$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>	<p>h. $799 \div 99$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>	<p>i. $635 \div 95$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>
<p>j. $311 \div 76$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>	<p>k. $648 \div 83$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>	<p>l. $143 \div 35$</p> <p>\approx _____ \div _____</p> <p>$=$ _____</p>

m. $525 \div 25$ \approx _____ \div _____ $=$ _____	n. $552 \div 85$ \approx _____ \div _____ $=$ _____	o. $667 \div 11$ \approx _____ \div _____ $=$ _____
---	---	---

2. A video game store has a budget of \$825 and would like to purchase new video games. If each video game costs \$41, estimate the total number of video games the store can purchase with their budget. Explain your thinking.
3. Jackson estimated $637 \div 78$ as $640 \div 80$. He reasoned that 64 tens divided by 8 tens should be 8 tens. Is Jackson's reasoning correct? If so, explain why. If not, explain a correct solution.

Name _____

Date _____

1. Estimate the quotient for the following problems. The first one is done for you.

<p>a. $821 \div 41$ $\approx 800 \div 40$ $= 20$</p>	<p>b. $617 \div 23$ \approx _____ \div _____ $=$ _____</p>	<p>c. $821 \div 39$ \approx _____ \div _____ $=$ _____</p>
<p>d. $482 \div 52$ \approx _____ \div _____ $=$ _____</p>	<p>e. $531 \div 48$ \approx _____ \div _____ $=$ _____</p>	<p>f. $141 \div 73$ \approx _____ \div _____ $=$ _____</p>
<p>g. $476 \div 81$ \approx _____ \div _____ $=$ _____</p>	<p>h. $645 \div 69$ \approx _____ \div _____ $=$ _____</p>	<p>i. $599 \div 99$ \approx _____ \div _____ $=$ _____</p>
<p>j. $301 \div 26$ \approx _____ \div _____ $=$ _____</p>	<p>k. $729 \div 81$ \approx _____ \div _____ $=$ _____</p>	<p>l. $636 \div 25$ \approx _____ \div _____ $=$ _____</p>

m. $835 \div 89$ \approx _____ \div _____ $=$ _____	n. $345 \div 72$ \approx _____ \div _____ $=$ _____	o. $559 \div 11$ \approx _____ \div _____ $=$ _____
---	---	---

2. Mrs. Johnson spent \$611 buying lunch for 78 students. If all of the lunches were the same cost, about how much did she spend on each lunch?
3. An oil well produces 172 gallons of oil every day. A standard oil barrel holds 42 gallons of oil. About how many barrels of oil will the well produce in one day? Explain your thinking.

Name _____

Date _____

1. Estimate the quotient for the following problems. The first one is done for you.

<p>a. $5,738 \div 21$ $\approx 6,000 \div 20$ $= 300$</p>	<p>b. $2,659 \div 28$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>c. $9,155 \div 34$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>d. $1,463 \div 53$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>e. $2,525 \div 64$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>f. $2,271 \div 72$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>g. $4,901 \div 75$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>h. $8,515 \div 81$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>i. $8,515 \div 89$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>j. $3,925 \div 68$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>k. $5,124 \div 81$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>l. $4,945 \div 93$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>m. $5,397 \div 94$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>n. $6,918 \div 86$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>o. $2,806 \div 15$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>

2. A swimming pool requires 672 ft^2 of floor space. The length of the swimming pool is 32 ft. Estimate the width of the swimming pool.
3. Janice bought 28 apps for her phone that, altogether, used 1,348 MB of space.
- If each app used the same amount of space, about how many MB of memory did each app use? Show how you estimated.
 - If half of the apps were free and the other half were \$1.99 each, about how much did she spend?
4. A quart of paint covers about 85 square feet. About how many quarts would you need to cover a fence with an area of 3,817 square feet?
5. Peggy has saved \$9,215. If she is paid \$45 an hour, about how many hours did she work?

Name _____

Date _____

1. Estimate the quotient for the following problems. The first one is done for you.

<p>a. $8,328 \div 41$ $\approx 8,000 \div 40$ $= 200$</p>	<p>b. $2,109 \div 23$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>c. $8,215 \div 38$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>d. $3,861 \div 59$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>e. $2,899 \div 66$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>f. $5,576 \div 92$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>g. $5,086 \div 73$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>h. $8,432 \div 81$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>i. $9,032 \div 89$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>j. $2,759 \div 48$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>k. $8,194 \div 91$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>l. $4,368 \div 63$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>m. $6,537 \div 74$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>n. $4,998 \div 48$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>o. $6,106 \div 25$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>

2. 91 boxes of apples hold a total of 2,605 apples. Assuming each box has about the same number of apples, estimate the number of apples in each box.
3. A wild tiger can eat up to 55 pounds of meat in a day. About how many days would it take for a tiger to eat the following prey?

Prey	Weight of Prey	Number of Days
Eland Antelope	1,754 pounds	
Boar	661 pounds	
Chital Deer	183 pounds	
Water Buffalo	2,322 pounds	

Name _____

Date _____

1. Divide, then check. The first one is done for you.

a. $41 \div 30$

Check:

$$\begin{array}{r}
 1 \text{ R } 11 \\
 30 \overline{) 41} \\
 \underline{30} \\
 11
 \end{array}$$

$30 \times 1 = 30$

$30 + 11 = 41$

b. $80 \div 30$

c. $71 \div 50$

d. $270 \div 30$

e. $643 \div 80$

f. $215 \div 90$

2. Terry says the solution to $299 \div 40$ is 6 R59. His work is shown below. Explain Terry's error in thinking, and then find the correct quotient using the space on the right.

$$\begin{array}{r} 40 \overline{) 299} \\ \underline{240} \\ 59 \end{array}$$

$$40 \overline{) 299}$$

3. A number divided by 80 has a quotient of 7 with 4 as a remainder. Find the number.

4. While swimming a 2 km race, Adam changes from breaststroke to butterfly every 200 m. How many times did he switch strokes during the first half of the race?

Name _____

Date _____

1. Divide, then check using multiplication. The first one is done for you.

a. $71 \div 20$

$$\begin{array}{r} 3 \text{ R } 11 \\ 20 \overline{) 71} \\ \underline{60} \\ 11 \end{array}$$

Check:

$$20 \times 3 = 60$$

$$60 + 11 = 71$$

b. $90 \div 40$

c. $95 \div 60$

d. $280 \div 30$

e. $437 \div 60$

f. $346 \div 80$

- A number divided by 40 has a quotient of 6 with a remainder of 16. Find the number.
- A shipment of 288 textbooks has been delivered. Each of the 10 classrooms will receive an equal share of the books, with any extra books being stored in the bookroom. After the texts have been distributed to the classrooms, how many will be stored in the bookroom?
- How many sixties are in two hundred forty-four?

Name _____

Date _____

1. Divide, then check with multiplication. The first one is done for you.

a. $65 \div 17$

d. $84 \div 32$

$$\begin{array}{r}
 17 \overline{) 65} \\
 \underline{- 51} \\
 14
 \end{array}$$

Check:

$17 \times 3 = 51$

$51 + 14 = 65$

b. $49 \div 21$

e. $77 \div 25$

c. $78 \div 39$

f. $68 \div 17$

2. When dividing 82 by 43, Linda estimated the quotient to be 2. Examine Linda’s work and explain what she needs to do next. On the right, show how you would solve the problem.

Linda’s estimation:

$$40 \overline{) 80} \begin{array}{r} 2 \\ \end{array}$$

Linda’s work:

$$\begin{array}{r} 43 \overline{) 82} \\ \underline{- 86} \\ ? \end{array}$$

Your work:

$$43 \overline{) 82}$$

3. A number divided by 43 has a quotient of 3 with 28 as a remainder. Find the number. Show your work.

4. Write another division problem that has a quotient of 3 and a remainder of 28.

5. Mrs. Silverstein sold 91 cupcakes at a food fair. The cupcakes were sold in boxes of “a baker’s dozen,” which is 13. She sold all the cupcakes at \$15 per box. How much money did she receive?

Name _____

Date _____

1. Divide, then check with multiplication. The first one is done for you.

a. $72 \div 31$

d. $67 \div 19$

$$\begin{array}{r} 31 \overline{) 72} \quad \text{R } 10 \\ \underline{- 62} \\ 10 \end{array}$$

Check:

$31 \times 2 = 62$

$62 + 10 = 72$

b. $89 \div 21$

e. $79 \div 25$

c. $94 \div 33$

f. $83 \div 21$

2. A 189-square-foot rectangular office has a length of 21 feet. What is the width of the office?
3. While preparing for a morning conference, Principal Corsetti is laying out 15 dozen bagels on square plates. Each plate can hold 14 bagels.
- a. How many plates of bagels will Mr. Corsetti have?
- b. How many more bagels would be needed to fill the final plate with bagels?

Name _____

Date _____

1. Divide, then check using multiplication. The first one is done for you.

a. $258 \div 47$

$$\begin{array}{r}
 47 \overline{) 258} \\
 \underline{235} \\
 23 \\
 \underline{23} \\
 0
 \end{array}$$

Check:

$47 \times 5 = 235$

$235 + 23 = 258$

b. $148 \div 67$

c. $591 \div 73$

d. $759 \div 94$

e. $653 \div 74$

f. $257 \div 36$

2. Generate and solve at least one more division problem with the same quotient and remainder as the one below. Explain your thought process.

$$\begin{array}{r}
 8 \\
 58 \overline{) 475} \\
 \underline{- 464} \\
 11
 \end{array}$$

3. Assume that Mrs. Giang’s car travels 14 miles on each gallon of gas. If she travels to visit her niece who lives 133 miles away, how many gallons of gas will Mrs. Giang need to make the round trip?

_____ gas. If she
_____ gallons of gas

4. Louis brings 79 pencils to school. After he gives each of his 15 classmates an equal number of pencils, he will give any leftover pencils to his teacher.
- a. How many pencils will Louis’ teacher receive?
- b. If Louis decides instead to take an equal share of the pencils along with his classmates, will his teacher receive more pencils or fewer pencils? Show your thinking.

Name _____

Date _____

1. Divide, then check using multiplication. The first one is done for you.

a. $129 \div 21$

$$\begin{array}{r} 6 \text{ R } 3 \\ 21 \overline{) 129} \\ \underline{- 126} \\ 3 \end{array}$$

Check:

$21 \times 6 = 126$

$126 + 3 = 129$

b. $158 \div 37$

c. $261 \div 49$

d. $574 \div 82$

e. $464 \div 58$

f. $640 \div 9$

2. It takes Juwan exactly 35 minutes by car to get to his grandmother's. The nearest parking area is a 4-minute walk from her apartment. One week he visited more often. He realized that he spent 5 hours and 12 minutes traveling to her apartment and then back home. How many round trips did he make to visit his grandmother?
3. How many eighty-fours are in 672?

Name _____

Date _____

1. Divide, then check using multiplication. The first one is done for you.

a. $580 \div 17$

Check:

$$\begin{array}{r}
 34 \text{ R}2 \\
 17 \overline{)580} \\
 \underline{-51} \\
 70 \\
 \underline{-68} \\
 2
 \end{array}$$

$34 \times 17 = 578$

$578 + 2 = 580$

b. $730 \div 32$

c. $940 \div 28$

d. $553 \div 23$

e. $704 \div 46$

f. $614 \div 15$

2. Halle solved $664 \div 48$ below. She got a quotient of 13 with a remainder of 40. How could she use her work below to solve $659 \div 48$ without redoing the work? Explain your thinking.

$$\begin{array}{r}
 \overline{) 664} \\
 \underline{48} \\
 184 \\
 \underline{144} \\
 40
 \end{array}$$

3. 27 students are learning to make balloon animals. There are 172 balloons to be shared equally among the students.
- a. How many balloons are left over after sharing them equally?

- b. If each student needs 7 balloons, how many more balloons are needed? Explain how you know.

Name _____

Date _____

1. Divide, then check using multiplication. The first one is done for you.

a. $487 \div 21$

$$\begin{array}{r}
 21 \overline{) 487} \\
 \underline{42} \\
 67 \\
 \underline{63} \\
 4
 \end{array}$$

Check:

$21 \times 23 = 483$

$483 + 4 = 487$

b. $485 \div 15$

c. $700 \div 21$

d. $399 \div 31$

e. $820 \div 42$

- f. $908 \div 56$
2. When dividing 2,458 by 51, a student finds a quotient of 48 with a remainder of 11. Check the student's work, and use the check to find the error in their solution.
3. A baker was going to arrange 432 desserts into rows of 28. The baker divides 432 by 28 and gets a quotient of 15 with remainder 12. Explain what the quotient and remainder represent.

Name _____

Date _____

1. Divide, then check using multiplication.

a. $4,859 \div 23$

b. $4,368 \div 52$

c. $7,242 \div 34$

d. $3,164 \div 45$

e. $9,152 \div 29$

f. $4,424 \div 63$

2. Mr. Riley baked 1,692 chocolate cookies. He sold them in boxes of 36 cookies each. How much money did he collect if he sold them all at \$8 per box?
3. 1,092 flowers are arranged into 26 vases, with the same number of flowers in each vase. How many flowers would be needed to fill 130 such vases?
4. The elephant's water tank holds 2,560 gallons of water. After two weeks, the zookeeper measures and finds that the tank only has 1,934 gallons of water left. If the elephant drinks the same amount of water each day, how many days will a full tank of water last?

Name _____

Date _____

1. Divide, then check using multiplication.

a. $9,962 \div 41$

b. $1,495 \div 45$

c. $6,691 \div 28$

d. $2,625 \div 32$

e. $2,409 \div 19$

f. $5,821 \div 62$

2. A political gathering in South America held 788 people. Each of South America's 14 countries were equally represented. The remaining people were guests from the United States. How many guests were from the United States?
3. A chocolate company is packaging 32 ounces of caramels into reusable, plastic cups. When a shipping box is filled with these caramel packages, it weighs 49 pounds 8 ounces.
- a. How many caramel filled cups are in the box?
- b. Use your remainder to find the weight of each plastic cup.

Name _____

Date _____

1. Divide. Show the division in the right hand column in two steps. The first two have been done for you.

a. $1.2 \div 6 = 0.2$

b. $1.2 \div 60 = (1.2 \div 6) \div 10 = 0.2 \div 10 = 0.02$

c. $2.4 \div 4 =$ _____

d. $2.4 \div 40 =$ _____

e. $14.7 \div 7 =$ _____

f. $14.7 \div 70 =$ _____

g. $3.4 \div 2 =$ _____

h. $0.34 \div 20 =$ _____

i. $0.45 \div 9 =$ _____

j. $0.45 \div 90 =$ _____

k. $3.45 \div 3 =$ _____

l. $34.5 \div 300 =$ _____

2. Use place value reasoning and the first quotient to compute the second quotient. Explain your thought process.

a. $46.5 \div 5 = 9.3$

$46.5 \div 50 = \underline{\hspace{2cm}}$

b. $0.51 \div 3 = 0.17$

$0.51 \div 30 = \underline{\hspace{2cm}}$

c. $29.4 \div 70 = 0.42$

$2.94 \div 7 = \underline{\hspace{2cm}}$

d. $13.6 \div 40 = 0.34$

$13.6 \div 4 = \underline{\hspace{2cm}}$

3. 20 polar bears live at the zoo. In four weeks, they eat 9,732.8 pounds of food altogether. Assuming each bear is fed the same amount of food, how much food is used to feed one bear for a week? Round your answer to the nearest pound.
4. The total weight of 30 bags of flour and 4 bags of sugar is 42.6 kg. If each bag of sugar weighs 0.75 kg, what is the weight of each bag of flour?

Name _____ Date _____

1. Divide. Show the division in the right column in two steps. The first two have been done for you.

a. $1.8 \div 6 = 0.3$

g. $0.8 \div 4 =$ _____

b. $1.8 \div 60 = (1.8 \div 6) \div 10 = 0.3 \div 10 = 0.03$

h. $80 \div 400 =$ _____

c. $2.4 \div 8 =$ _____

i. $0.56 \div 7 =$ _____

d. $2.4 \div 80 =$ _____

j. $0.56 \div 70 =$ _____

e. $14.6 \div 2 =$ _____

k. $9.45 \div 9 =$ _____

f. $14.6 \div 20 =$ _____

l. $9.45 \div 900 =$ _____

2. Use place value reasoning and the first quotient to compute the second quotient. Use place value to explain how you placed the decimal point.
- a. $65.6 \div 80 = 0.82$
- $65.6 \div 8 =$ _____
- b. $2.5 \div 50 = 0.05$
- $2.5 \div 5 =$ _____
- c. $19.2 \div 40 = 0.48$
- $19.2 \div 4 =$ _____
- d. $39.6 \div 6 = 6.6$
- $39.6 \div 60 =$ _____
3. Chris rode his bike along the same route every day for 60 days. He logged that he had gone exactly 127.8 miles.
- a. How many miles did he bike each day? Show your work to explain how you know.
- b. How many miles did he bike over the course of two weeks?
4. 2.1 liters of coffee were equally distributed to 30 cups. How many milliliters of coffee were in each cup?

Name _____

Date _____

1. Estimate the quotients.

a. $3.24 \div 82 \approx$

b. $361.2 \div 61 \approx$

c. $7.15 \div 31 \approx$

d. $85.2 \div 31 \approx$

e. $27.97 \div 28 \approx$

2. Estimate the quotient in (a). Use your estimated quotient to estimate (b) and (c).

a. $7.16 \div 36 \approx$

b. $716 \div 36 \approx$

c. $71.6 \div 36 \approx$

3. Edward bikes the same route to and from school each day. After 28 school days, he bikes a total distance of 389.2 miles.
- Estimate how many miles he bikes in one day.
 - If Edward continues his routine of biking to school, about how days altogether will it take him to reach a total distance of 500 miles?
4. Xavier goes to the store with \$40. He spends \$38.60 on 13 bags of popcorn.
- About how much does a bag of popcorn cost?
 - Does he have enough money for another bag? Use your estimate to explain your answer.

Name _____

Date _____

1. Estimate the quotients.

a. $3.53 \div 51 \approx$

b. $24.2 \div 42 \approx$

c. $9.13 \div 23 \approx$

d. $79.2 \div 39 \approx$

e. $7.19 \div 58 \approx$

2. Estimate the quotient in (a). Use your estimated quotient to estimate (b) and (c).

a. $9.13 \div 42 \approx$

b. $913 \div 42 \approx$

c. $91.3 \div 42 \approx$

3. Mrs. Huynh bought a bag of 3 dozen toy animals as party favors for her son's birthday party for \$28.97. Estimate the price of each toy animal.
4. Carter drank 15.75 gallons of water in 4 weeks. He drank the same amount of water each day.
- Estimate how many gallons he drank in one day.
 - Estimate how many gallons he drank in one week.
 - About how many days altogether will it take him to drink 20 gallons?

Name _____

Date _____

1. $156 \div 24$ and $102 \div 15$ both have a quotient of 6 and a remainder of 12.
 - a. Are the division expressions equivalent to each other? Use your knowledge of decimal division to justify your answer.
 - b. Construct your own division problem with a two-digit divisor that has a quotient of 6 and a remainder of 12 but is not equivalent to the problems in 1(a).

2. Divide, then check your work with multiplication.
 - a. $36.14 \div 13$
 - b. $62.79 \div 23$
 - c. $12.21 \div 11$
 - d. $6.89 \div 13$
 - e. $249.6 \div 52$
 - f. $24.96 \div 52$
 - g. $300.9 \div 59$
 - h. $30.09 \div 59$

3. The weight of 72 identical marbles is 183.6 grams. What is the weight of each marble? Explain how you know the decimal point of your quotient is placed reasonably.
4. Cameron wants to measure the length of his classroom using his foot as a length unit. His teacher tells him the length of the classroom is 23 meters. Cameron steps across the classroom heel to toe and finds that it takes him 92 steps. How long is Cameron's foot in meters?
5. A blue rope is three times as long as a red rope. A green rope is 5 times as long as the blue rope. If the total length of the three ropes is 508.25 meters, what is the length of the blue rope?



Lesson 26:

Date:

Divide decimal dividends by two-digit divisors, estimating quotients, reasoning about the placement of the decimal point, and making connections to a written method.

7/4/13



This work is licensed under a

[Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License](https://creativecommons.org/licenses/by-nc-sa/3.0/).engage^{ny}2.G.35

Name _____

Date _____

1. Create two whole number division problems that have a quotient of 9 and a remainder of 5. Justify which is greater using decimal division.

2. Divide, then check your work with multiplication.

a. $75.9 \div 22$

c. $77.14 \div 38$

b. $97.28 \div 19$

d. $12.18 \div 29$

3. Divide.

a. $5,224 \div 43$

b. $1,908 \div 36$

4. Use the quotients in Problem 3 to write the quotients for the following. Explain how you decided where to place the decimal in the quotient.

a. $522.4 \div 43 =$ _____

$52.24 \div 43 =$ _____

b. $190.8 \div 36 =$ _____

$19.08 \div 36 =$ _____

5. The height of Burj Dubai, the tallest building in the world (2013), has a total of 162 stories. If the building is 828 meters tall, about how many meters tall is each story?

6. Elaine has a desktop that is 4.5 feet by 5.5 feet, and she is going to cover it with patches of wallpaper that each measure 18 inches wide and 24 inches long.

How many patches will Elaine need to cover the entire desktop? Justify your answer.

Name _____

Date _____

1. Divide. Check your work with multiplication.

a. $5.6 \div 16$

d. $36 \div 24$

g. $5.4 \div 15$

b. $21 \div 14$

e. $81 \div 54$

h. $16.12 \div 52$

c. $24 \div 48$

f. $15.6 \div 15$

i. $2.8 \div 16$

2. 30.48 kg of beef was placed into 24 packages of equal weight. What is the weight of one package of beef?

3. What is the length of a rectangle whose width is 17 inches and whose area is 582.25 in^2 ?
4. A soccer coach spent \$162 dollars on 24 pairs of socks for his players. How much did five pairs of socks cost?
5. A craft club makes 95 identical paperweights to sell. They collect \$230.85 from selling all the paperweights. If the profit the club collects on each paperweight is two times as much as the cost to make each one, what does it cost the club to make each paperweight?

Name _____

Date _____

1. Divide and check.

a. $7 \div 28$

c. $6.5 \div 13$

e. $561.68 \div 28$

b. $51 \div 25$

d. $132.16 \div 16$

f. $604.8 \div 36$

2. In a science class, students water a plant with the same amount of water each day for 28 consecutive days. If the students use a total of 23.8 liters of water over the 28 days, how many liters of water did they use each day? How many milliliters did they use each day?

3. A seamstress has a piece of cloth that is 3 yards long. She cuts it into shorter lengths of 16 inches each. How many of the shorter pieces can she cut?

4. Jenny filled 12 pitchers with an equal amount of lemonade in each. The total amount of lemonade in the 12 pitchers was 41.4 liters. How much lemonade would be in 7 pitchers?

3. Jim Nasium is building a tree house for his two daughters. He cuts 12 pieces of wood from a board that is 128 inches long. He cuts 5 pieces that measure 15.75 inches each, and 7 pieces evenly cut from what is left. Jim calculates that due to the width of his cutting blade, he will lose a total of 2 inches of wood after making all of the cuts. What is the length of each of the seven pieces?
4. A load of bricks is twice as heavy as a load of sticks. The total weight of 4 loads of bricks and 4 loads of sticks is 771 kilograms. What is the total weight of 1 load of bricks and 3 loads of sticks?

4. There are 90 fifth grade students going on a field trip. Each one pays the teacher \$9.25 to cover admission to the theater and lunch. Admission for the students will cost \$315 and each one gets and equal amount to spend on lunch. How much will each fifth grader be able to spend on lunch?
5. Ben is making math manipulatives to sell. He needs to make at least \$450. Each manipulative costs \$18 to make. He is selling them for \$30 each. What is the minimum number he can sell to reach his goal?

Name _____

Date _____

1. Lamar has 1,354.5 kilograms of potatoes to deliver to 18 stores. 12 of the stores are in the Bronx. How many kilograms of potatoes will be delivered to stores in the Bronx?

2. Valerie uses 12 oz of detergent each week for her laundry. If there are 75 oz of detergent in the bottle, in how many weeks will she need to buy a new bottle of detergent? Explain how you know.

3. The area of a rectangle is 56.96 m^2 . If the length is 16 m, what is its perimeter?
4. A city block is 3 times as long as it is wide. If the distance around the block is 0.48 kilometers, what is the area of the block in square meters?

4. Tyler baked 702 cookies. He sold them in boxes of 18. After selling all the boxes of cookies, he earned \$136.50. What was the cost of one box of cookies?
5. A park is 4 times as long as it is wide. If the distance around the park is 12.5 kilometers, what is the area of the park?