A Story of Units®

Eureka Math™

Grade 5, Module 2

Student File_A

Contains copy-ready classwork and homework as well as templates (including cut outs)

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10 9 8 7 6 5 4 3 2 1

Name _____ Date _____

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

a. 23 × 20 Think: 23 ones × 2 tens = _____ tens 23 × 20 = _____	b. 230 × 20 Think: 23 tens × 2 tens = _____ 230 × 20 = _____
c. 41 × 4 41 ones × 4 ones = 164 _____ 41 × 4 = _____	d. 410 × 400 41 tens × 4 hundreds = 164 _____ 410 × 400 = _____
e. 3,310 × 300 _____ tens × _____ hundreds = 993 _____ 3,310 × 300 = _____	f. 500 × 600 _____ hundreds × _____ hundreds = 30 _____ 500 × 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 tens = 2 tens × 3 tens

   b. 44 × 20 × 10 = 440 × 2

   c. 86 ones × 90 hundreds = 86 ones × 900 tens

   d. 64 × 8 × 100 = 640 × 8 × 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.

7,000	×	600	=	4,200,000	800	×	700	=	560,000
(3 zeros)		(2 zeros)		(5 zeros)	(2 zeros)		(2 zeros)		(4 zeros)

Ripley's mom said his strategy will not 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 × 3 tens = _____ tens

      43 × 30 = _____

   b. 430 × 30

      Think: 43 tens × 3 tens = _____ hundreds

      430 × 30 = _____

   c. 830 × 20

      Think: 83 tens × 2 tens = 166 _____

      830 × 20 = _____

   d. 4,400 × 400

      _____ hundreds × _____ hundreds = 176 _____

      4,400 × 400 = _____

   e. 80 × 5,000

      _____ tens × _____ thousands = 40 _____

      80 × 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 × 7 tens

   b. 770 × 6 = 77 × 6 × 100

   c. 50 tens × 4 hundreds = 40 tens × 5 hundreds

   d. 24 × 10 × 90 = 90 × 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 × 10 = 250	50 × 50 = (5 × 10) × (5 × 10) = (5 × 5) × 100 = 2,500	50 × 500 = (5 × 5) × (10 × 100) = 25,000
b.	80 × 5	80 × 50	800 × 500	8,000 × 50
c.	637 × 3	6,370 × 30	6,370 × 300	63,700 × 300

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

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

$\frac{1}{1,000}$	Thousandths					
$\frac{1}{100}$	Hundredths					
$\frac{1}{10}$	Tenths					
•	•	•	•	•	•	•
1	Ones					
10	Tens					
100	Hundreds					
1,000	Thousands					
10,000	Ten Thousands					
100,000	Hundred Thousands					
1,000,000	Millions					

millions to thousandths place value chart

Name _____ Date _____

1. Round the factors to estimate the products.

   a. 597 × 52 ≈ _____ × _____ = _____

      A reasonable estimate for 597 × 52 is _____.

   b. 1,103 × 59 ≈ _____ × _____ = _____

      A reasonable estimate for 1,103 × 59 is _____.

   c. 5,840 × 25 ≈ _____ × _____ = _____

      A reasonable estimate for 5,840 × 25 is _____.

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

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

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

   2,146 × 12 21,467 × 121 2,146 × 121 21,477 × 1,217

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

   a. 571 × 43 ≈ _____ × _____ = 24,000

   b. 726 × 674 ≈ _____ × _____ = 490,000

   c. 8,379 × 541 ≈ _____ × _____ = 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 × 82 ≈ _____ × _____ = _____

   A reasonable estimate for 697 × 82 is _____.

   b. 5,897 × 67 ≈ _____ × _____ = _____

   A reasonable estimate for 5,897 × 67 is _____.

   c. 8,840 × 45 ≈ _____ × _____ = _____

   A reasonable estimate for 8,840 × 45 is _____.

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

Expressions	Rounded Factors	Estimate
a. 3,409 × 73	3,000 × 70	210,000
b. 82,290 × 240		
c. 9,832 × 39		
d. 98 tens × 36 tens		
e. 893 hundreds × 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 × 12 81,467 × 121 8,146 × 121 81,477 × 1,217

4. Fill in the blank with the missing estimate.

   a. 751 × 34 ≈ _____ × _____ = 24,000

   b. 627 × 674 ≈ _____ × _____ = 420,000

   c. 7,939 × 541 ≈ _____ × _____ = 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. Then, solve.

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

4. Mr. Huynh wrote *the sum of 7 fifteens and 38 fifteens* on the board.

   Draw a model, and write the correct expression.

5. Two students wrote the following numerical expressions.

   Angeline: (7 + 15) × (38 + 15)

   MeiLing: 15 × (7 + 38)

   Are the students' expressions equivalent to your answer in Problem 4? Explain your answer.

6. A box contains 24 oranges. Mr. Lee ordered 8 boxes for his store and 12 boxes for his restaurant.

   a. Write an expression to show how to find the total number of oranges ordered.

   b. Next week, Mr. Lee will double the number of boxes he orders. Write a new expression to represent the number of oranges in next week's order.

   c. Evaluate your expression from Part (b) to find the total number of oranges ordered in both weeks.

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. Then, solve.

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

4. Larry claims that (14 + 12) × (8 + 12) and (14 × 12) + (8 × 12) are equivalent because they have the same digits and the same operations.

   a. Is Larry correct? Explain your thinking.

   b. Which expression is greater? How much greater?

Name _____ Date _____

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

   a. **16 × 29**

   29 sixteens | 16 × (30 – 1) | (15 – 1) × 29 | (10 × 29) – (6 × 29)

   b. **38 × 45**

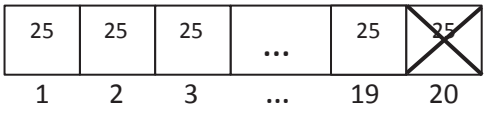
   (38 + 40) × (38 + 5) | (38 × 40) + (38 × 5) | 45 × (40 + 2) | 45 thirty-eights

   c. **74 × 59**

   74 × (50 + 9) | 74 × (60 – 1) | (74 × 5) + (74 × 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 is partially done for you.

a. 19 × 25 = _____ twenty-fives



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

= (_____ × 25) – (_____ × 25)

= _____ – _____

= _____

b. 24 × 11 = _____ twenty-fours

Think: _____ twenty fours + _____ twenty four

= (_____ × 24) + (_____ × 24)

= _____ + _____

= _____

c. 79 × 14 = _____ fourteens Think: _____ fourteens – 1 fourteen = (_____ × 14) – (_____ × 14) = _____ – _____ = _____	d. 21 × 75 = _____ seventy-fives Think: _____ seventy-fives + _____ seventy-five = (_____ × 75) + (_____ × 75) = _____ + _____ = _____

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

a. 19 × 15 = 19 _____ Think: 20 _____ – 1 _____ = (20 × _____) – (1 × _____) = _____ – _____ = _____	b. 14 × 15 = 14 _____ Think: 10 _____ + 4 _____ = (10 × _____) + (4 × _____) = _____ + _____ = _____

c. 25 × 12 = 12 _____ Think: 10 _____ + 2 _____ = (10 × _____) + (2 × _____) = _____ + _____ = _____	d. 18 × 17 = 18 _____ Think: 20 _____ – 2 _____ = (20 × _____) – (2 × _____) = _____ – _____ = _____

4. How can 14 × 50 help you find 14 × 49?

5. Solve mentally.
   a. 101 × 15 = _____
   b. 18 × 99 = _____

6. Saleem says 45 × 32 is the same as (45 × 3) + (45 × 2). Explain Saleem's error using words, numbers, and/or 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 × 19) – (7 × 29) | 37 × (20 – 1) | (40 – 2) × 19

   b. **26 × 35**

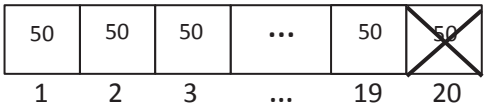
   35 twenty-sixes | (26 + 30) × (26 + 5) | (26 × 30) + (26 × 5) | 35 × (20 + 60)

   c. **34 × 89**

   34 × (80 + 9) | (34 × 8) + (34 × 9) | 34 × (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 is partially done for you.

a. 19 × 50 = _____ fifties



Think: 20 fifties – 1 fifty

= (_____ × 50) – (_____ × 50)

= _____ – _____

= _____

b. 11 × 26 = _____ twenty-sixes

Think: _____ twenty-sixes + _____ twenty-six

= (_____ × 26) + (_____ × 26)

= _____ + _____

= _____

c. 49 × 12 = _____ twelves Think: _____ twelves – 1 twelve = (_____ × 12) – (_____ × 12) = _____ – _____ = _____	d. 12 × 25 = _____ twenty-fives Think: _____ twenty-fives + _____ twenty-fives = (_____ × 25) + (_____ × 25) = _____ + _____ = _____

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

a. 29 × 12 = 29 _____ Think: 30 _____ – 1 _____ = (30 × _____) – (1 × _____) = _____ – _____ = _____	b. 11 × 31 = 31 _____ Think: 30 _____ + 1 _____ = (30 × _____) + (1 × _____) = _____ + _____ = _____

c. 19 × 11 = 19 _____ Think: 20 _____ – 1 _____ = (20 × _____) – (1 × _____) = _____ – _____ = _____	d. 50 × 13 = 13 _____ Think: 10 _____ + 3 _____ = (10 × _____) + (3 × _____) = _____ + _____ = _____

4. How can 12 × 50 help you find 12 × 49?

5. Solve mentally.

   a. 16 × 99 = _____

   b. 20 × 101 = _____

6. Joy is helping her father to build a rectangular 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 = _____

   3 4
   × 2 1

   b. 434 × 21 = _____

   4 3 4
   × 2 1

2. Solve using the standard algorithm.

   a. 431 × 12 = _____ b. 123 × 23 = _____ c. 312 × 32 = _____

3. Betty saves $161 a month. She saves $141 less each month than Jack. How much will Jack save in 2 years?

4. Farmer Brown feeds 12.1 kilograms 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, 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. 24 × 21 = _____

   2 4
   × 2 1

   b. 242 × 21 = _____

   2 4 2
   × 2 1

2. Solve using the standard algorithm.

   a. 314 × 22 = _____ b. 413 × 22 = _____ c. 213 × 32 = _____

3. A young snake measures 0.23 meters long. During the course of his lifetime, he will grow to be 13 times his current length. What will his length be when he is 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. 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

   4 8
   × 3 5

   b. 648 × 35

   6 4 8
   × 3 5

2. Solve using the standard algorithm.
   a. 758 × 92
   b. 958 × 94
   c. 476 × 65
   d. 547 × 64

3. Carpet costs $16 a square foot. A rectangular floor is 16 feet long by 14 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. 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 × 36

$$\begin{array}{r} 2\,7 \\ \times\ 3\,6 \\ \hline \end{array}$$

   b. 527 × 36

$$\begin{array}{r} 5\,2\,7 \\ \times\ 3\,6 \\ \hline \end{array}$$

2. Solve using the standard algorithm.

   a. 649 × 53

   b. 496 × 53

   c. 758 × 46

   d. 529 × 48

3. Each of the 25 students in Mr. McDonald's class sold 16 raffle tickets. If each ticket costs $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 $1,250. What was the total price of the vehicle?

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. 481 × 352

   4 8 1

   × 3 5 2

   b. 481 × 302

   4 8 1

   × 3 0 2

   c. 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 × 305

$$\begin{array}{r} 8,401 \\ \times \quad 305 \\ \hline \end{array}$$

   b. 7,481 × 350

$$\begin{array}{r} 7,481 \\ \times \quad 350 \\ \hline \end{array}$$

3. Solve using the standard algorithm.

   a. 346 × 27

   b. 1,346 × 297

c. 346 × 207

d. 1,346 × 207

4. A school district purchased 615 new laptops for their mobile labs. Each computer cost $409. What is 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. 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 × 346

   $$\begin{array}{r} 2\,7\,3 \\ \times\ 3\,4\,6 \\ \hline \end{array}$$

   b. 273 × 306

   $$\begin{array}{r} 2\,7\,3 \\ \times\ 3\,0\,6 \\ \hline \end{array}$$

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

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

   a. 7,481 × 290

   b. 7,018 × 209

3. Solve using the standard algorithm.

   a. 426 × 357

   b. 1,426 × 357

c. 426 × 307

d. 1,426 × 307

4. The Hudson Valley Renegades Stadium holds a maximum of 4,505 people. During the height of their popularity, they sold out 219 consecutive games. How many tickets were sold during this time?

5. One Saturday at the farmer's market, each of the 94 vendors made $502 in profit. How much profit did all vendors make that Saturday?

Name _____ Date _____

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

a. 213 × 328 ≈ 200 × 300 = 60,000 2 1 3 × 3 2 8	b. 662 × 372	c. 739 × 442
d. 807 × 491	e. 3,502 × 656	f. 4,390 × 741
g. 530 × 2,075	h. 4,004 × 603	i. 987 × 3,105

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. There are 315 cards in each box. 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.

a. 312 × 149 ≈ 300 × 100 = 30,000 3 1 2 × 1 4 9	b. 743 × 295	c. 428 × 637
d. 691 × 305	e. 4,208 × 606	f. 3,068 × 523
g. 430 × 3,064	h. 3,007 × 502	i. 254 × 6,104

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 is 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 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 first?

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.

   a. If there are 13 grade levels, how many students attend Hooperville Schools?

   b. 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. For how many total yards did the quarterback pass?

   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. $22 \times 2.4 \approx$ _____ × _____ = _____

   2 4 (tenths)

   × 2 2

   b. 3.1×33 _____ × _____ = _____

   3 1 (tenths)

   × 3 3

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

   a. $3.2 \times 47 \approx$ _____ × _____ = _____

   3 2 (tenths)

   × 4 7

   b. $3.2 \times 94 \approx$ _____ × _____ = _____

   3 2 (tenths)

   × 9 4

c. $6.3 \times 44 \approx$ _____ × _____ = _____

d. $14.6 \times 17 \approx$ _____ × _____ = _____

e. $8.2 \times 34 \approx$ _____ × _____ = _____

f. $160.4 \times 17 \approx$ _____ × _____ = _____

3. Michelle multiplied 3.4×52. She incorrectly wrote 1,768 as her product. Use words, numbers, and/or 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 × 1.2 ≈ _____ × _____ = _____

   1 2 (tenths)

   × 5 3

   b. 2.1 × 82 ≈ _____ × _____ = _____

   2 1 (tenths)

   × 8 2

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

   a. 4.2 × 34 ≈ _____ × _____ = _____

   4 2 (tenths)

   × 3 4

   b. 65 × 5.8 ≈ _____ × _____ = _____

   5 8 (tenths)

   × 6 5

c. $3.3 \times 16 \approx$ _____ × _____ = _____

d. $15.6 \times 17 \approx$ _____ × _____ = _____

e. $73 \times 2.4 \approx$ _____ × _____ = _____

f. $193.5 \times 57 \approx$ _____ × _____ = _____

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 weekday 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 × 32 ≈ _____ × _____ = _____

Think!
1.38 × 100 = 138

$$\begin{array}{r} 1.38 \\ \times\ 32 \\ \hline \end{array}$$

1.38 × 32 = _____

Think! 4,416 is 100 times too large! What is the real product?

4,416 ÷ 100 = 44.16

b. 3.55 × 89 ≈ _____ × _____ = _____

$$\begin{array}{r} 3.55 \\ \times\ 89 \\ \hline \end{array}$$

3.55 × 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 × 768 = 75,264 then 98 × 7.68 = _____

   b. If 73 × 1,563 = 114,099 then 73 × 15.63 = _____

   c. If 46 × 1,239 = 56,994 then 46 × 123.9 = _____

4. Jenny buys 22 pens that cost $1.15 each and 15 markers that cost $2.05 each. How much did 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 × 12 ≈ _____ × _____ = _____

Think!
2.42 × 100 = 242

2. 4 2
× 1 2

2.42 × 12 = _____

Think! 2,904 is 100 times too large! What is the real product?

2,904 ÷ 100 = 29.04

b. 4.13 × 37 ≈ _____ × _____ = _____

4 . 1 3
× 3 7

4.13 × 37 = _____

2. Solve using the standard algorithm.

   a. 2.03 × 13

   b. 53.16 × 34

   c. 371.23 × 53

   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 × 134 = 4,824 then 36 × 1.34 = _____

   b. If 84 × 2,674 = 224,616 then 84 × 26.74 = _____

   c. 19 × 3,211 = 61,009 then 321.1 × 19 = _____

4. A slice of pizza costs $1.57. How much will 27 slices cost?

5. A spool of ribbon holds 6.75 meters. A 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. Then, solve using the standard algorithm. You may draw an area model if it helps you.

   a. 1.21 × 14 ≈ _____ × _____ = _____

$$\begin{array}{r} 1.21 \\ \times\ 14 \\ \hline \end{array}$$

   b. 2.45 × 305 ≈ _____ × _____ = _____

$$\begin{array}{r} 2.45 \\ \times\ 305 \\ \hline \end{array}$$

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

a. $1.23 \times 12 \approx$ _____ × _____ = _____

b. $1.3 \times 26 \approx$ _____ × _____ = _____

c. $0.23 \times 14 \approx$ _____ × _____ = _____

d. $0.45 \times 26 \approx$ _____ × _____ = _____

e. $7.06 \times 28 \approx$ _____ × _____ = _____

f. $6.32 \times 223 \approx$ _____ × _____ = _____

g. $7.06 \times 208 \approx$ _____ × _____ = _____

h. $151.46 \times 555 \approx$ _____ × _____ = _____

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. Then, solve using the standard algorithm. You may draw an area model if it helps you.

   a. $24 \times 2.31 \approx$ _____ × _____ = _____

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

   b. $5.42 \times 305 \approx$ _____ × _____ = _____

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

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

a. $1.23 \times 21 \approx$ _____ × _____ = _____

b. $3.2 \times 41 \approx$ _____ × _____ = _____

c. $0.32 \times 41 \approx$ _____ × _____ = _____

d. $0.54 \times 62 \approx$ _____ × _____ = _____

e. $6.09 \times 28 \approx$ _____ × _____ = _____

f. $6.83 \times 683 \approx$ _____ × _____ = _____

g. $6.09 \times 208 \approx$ _____ × _____ = _____

h. $171.76 \times 555 \approx$ _____ × _____ = _____

3. Eric's goal is to walk 2.75 miles to and from the park every day for an entire year. If he meets his goal, how many miles will Eric 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. Solve. The first one is done for you.

a. Convert weeks to days. 8 weeks = 8 × (1 week) = 8 × (7 days) = 56 days	b. Convert years to days. 4 years = _____ × (_____ year) = _____ × (_____ days) = _____ days
c. Convert meters to centimeters. 9.2 m = _____ × (_____ m) = _____ × (_____ cm) = _____ cm	d. Convert yards to feet. 5.7 yards
e. Convert kilograms to grams. 6.08 kg	f. Convert pounds to ounces. 12.5 pounds

2. After solving, write a statement to express each conversion. The first one is done for you.

a. Convert the number of hours in a day to minutes. 24 hours = 24 × (1 hour) = 24 × (60 minutes) = 1,440 minutes One day has 24 hours, which is the same as 1,440 minutes.	b. A small female gorilla weighs 68 kilograms. How much does she weigh in grams?
c. The height of a man is 1.7 meters. What is his height in centimeters?	d. The capacity of a syringe is 0.08 liters. Convert this to milliliters.
e. A coyote weighs 11.3 pounds. Convert the coyote's weight to ounces.	f. An alligator is 2.3 yards long. What is the length of the alligator in inches?

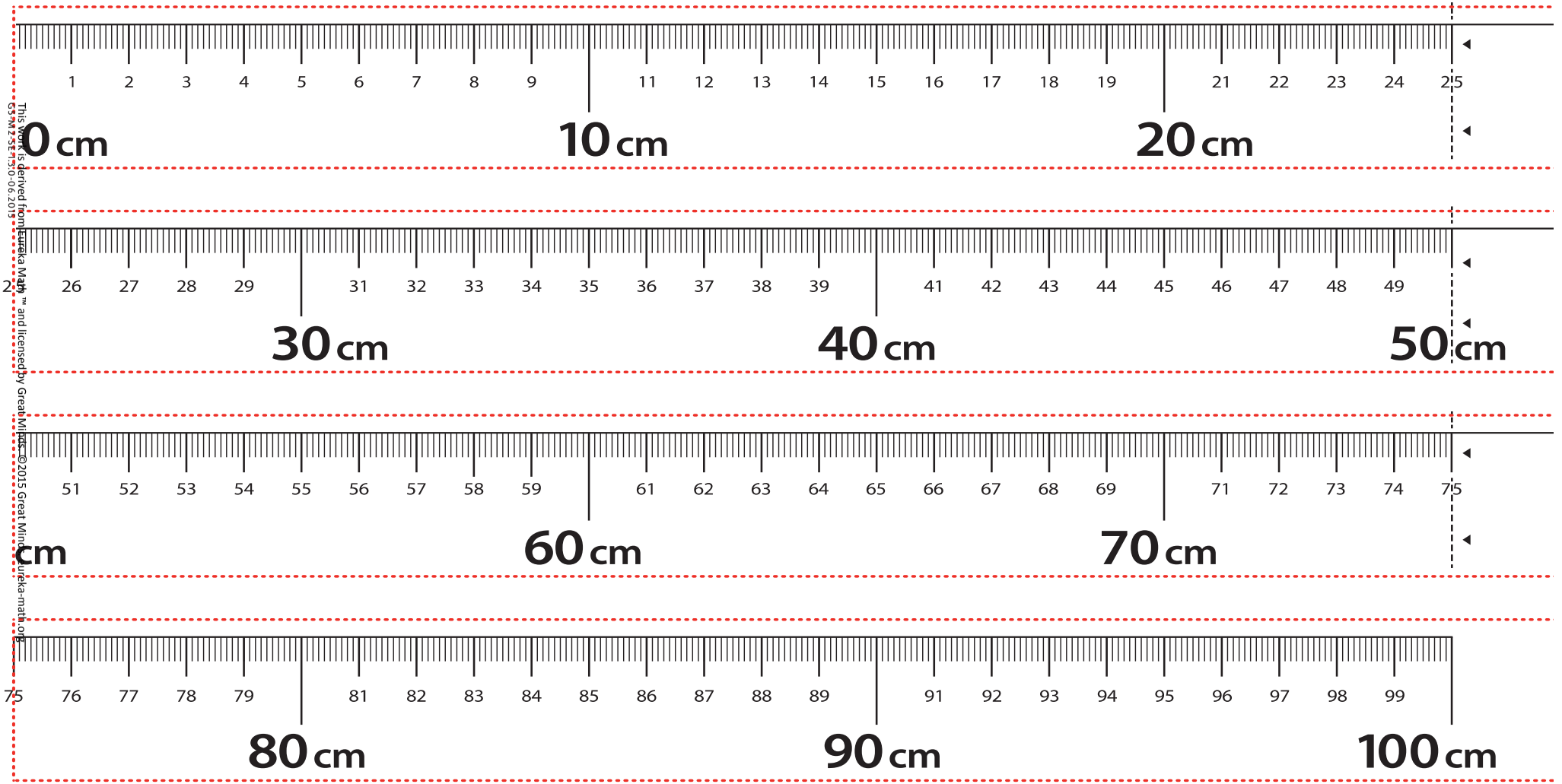
Name _____ Date _____

1. Solve. The first one is done for you.

a. Convert weeks to days. 6 weeks = 6 × (1 week) = 6 × (7 days) = 42 days	b. Convert years to days. 7 years = _____ × (_____ year) = _____ × (_____ days) = _____ days
c. Convert meters to centimeters. 4.5 m = _____ × (_____ m) = _____ × (_____ cm) = _____ cm	d. Convert pounds to ounces. 12.6 pounds
e. Convert kilograms to grams. 3.09 kg	f. Convert yards to inches. 245 yd

2. After solving, write a statement to express each conversion. The first one is done for you.

a. Convert the number of hours in a day to minutes. 24 hours = 24 × (1 hour) = 24 × (60 minutes) = 1,440 minutes One day has 24 hours, which is the same as 1,440 minutes.	b. A newborn giraffe weighs about 65 kilograms. How much does it weigh in grams?
c. The average height of a female giraffe is 4.6 meters. What is her height in centimeters?	d. The capacity of a beaker is 0.1 liter. Convert this to milliliters.
e. A pig weighs 9.8 pounds. Convert the pig's weight to ounces.	f. A marker is 0.13 meters long. What is the length in millimeters?



meter strip

LEGEND CUT ALIGN EDGE

Name _____ Date _____

1. Solve. The first one is done for you.

a. Convert days to weeks. 28 days = 28 × (1 day) $= 28 \times \left(\frac{1}{7} \text{ week}\right)$ $= \frac{28}{7}$ week = 4 weeks	b. Convert quarts to gallons. 20 quarts = _____ × (1 quart) = _____ × $\left(\frac{1}{4} \text{ gallon}\right)$ = _____ gallons = _____ gallons
c. Convert centimeters to meters. 920 cm = _____ × (_____ cm) = _____ × (_____ m) = _____ m	d. Convert meters to kilometers. 1,578 m = _____ × (_____ m) = _____ × (0.001 km) = _____ km
e. Convert grams to kilograms. 6,080 g =	f. Convert milliliters to liters. 509 mL =

2. After solving, write a statement to express each conversion. The first one is done for you.

a. The screen measures 24 inches. Convert 24 inches to feet.

$$24 \text{ inches} = 24 \times (1 \text{ inch})$$
$$= 24 \times \left(\frac{1}{12} \text{ feet}\right)$$
$$= \frac{24}{12} \text{ feet}$$
$$= 2 \text{ feet}$$

The screen measures 24 inches or 2 feet.

b. A jug of syrup holds 12 cups. Convert 12 cups to pints.

c. The length of the diving board is 378 centimeters. What is its length in meters?

d. The capacity of a container is 1,478 milliliters. Convert this to liters.

e. A truck weighs 3,900,000 grams. Convert the truck's weight to kilograms.

f. The distance was 264,040 meters. Convert the distance to kilometers.

Name _____ Date _____

1. Solve. The first one is done for you.

a. Convert days to weeks. 42 days = 42 × (1 day) $= 42 \times \left(\frac{1}{7} \text{ week}\right)$ $= \frac{42}{7}$ week = 6 weeks	b. Convert quarts to gallons. 36 quarts = _____ × (1 quart) = _____ × $\left(\frac{1}{4} \text{ gallon}\right)$ = _____ gallons = _____ gallons
c. Convert centimeters to meters. 760 cm = _____ × (_____ cm) = _____ × (_____ m) = _____ m	d. Convert meters to kilometers. 2,485 m = _____ × (_____ m) = _____ × (0.001 km) = _____ km
e. Convert grams to kilograms. 3,090 g =	f. Convert milliliters to liters. 205 mL =

2. After solving, write a statement to express each conversion. The first one is done for you.

<table>
<tr>
<td>a. The screen measures 36 inches. Convert 36 inches to feet.

36 inches = 36 × (1 inch)

$= 36 \times \left(\frac{1}{12} \text{ feet}\right)$

$= \frac{36}{12}$ feet

= 3 feet

The screen measures 36 inches or 3 feet.</td>
<td>b. A jug of juice holds 8 cups. Convert 8 cups to pints.</td>
</tr>
<tr>
<td>c. The length of the flower garden is 529 centimeters. What is its length in meters?</td>
<td>d. The capacity of a container is 2,060 milliliters. Convert this to liters.</td>
</tr>
<tr>
<td>e. A hippopotamus weighs 1,560,000 grams. Convert the hippopotamus’ weight to kilograms.</td>
<td>f. The distance was 372,060 meters. Convert the distance to kilometers.</td>
</tr>
</table>

Name _____ Date _____

Solve.

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

2. A container of oregano is 17 pounds heavier than a container of peppercorns. Their total weight is 253 pounds. The peppercorns will be sold in one-ounce bags. How many bags of peppercorns can be made?

3. Each costume needs 46 centimeters of red ribbon and 3 times as much yellow ribbon. What is the total length of ribbon needed for 64 costumes? Express your answer in meters.

4. When making a batch of orange juice for her basketball team, Jackie used 5 times as much water as concentrate. There were 32 more cups of water than concentrate.

   a. How much juice did she make in all?

   b. She poured the juice into quart containers. How many containers could she fill?

Name _____ Date _____

Solve.

1. Tia cut a 4-meter 8-centimeter wire into 10 equal pieces. Marta cut a 540-centimeter wire into 9 equal pieces. How much longer is one of Marta's wires than one of Tia's?

2. Jay needs 19 quarts more paint for the outside of his barn than for the inside. If he uses 107 quarts in all, how many gallons of paint will be used to paint the inside of the barn?

3. String A is 35 centimeters long. String B is 5 times as long as String A. Both are necessary to create a decorative bottle. Find the total length of string needed for 17 identical decorative bottles. Express your answer in meters.

4. A pineapple is 7 times as heavy as an orange. The pineapple also weighs 870 grams more than the orange.

   a. What is the total weight in grams for the pineapple and orange?

   b. Express the total weight of the pineapple and orange in kilograms.

Name _____ Date _____

1. Divide. Draw place value 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 ÷ 10	b. 360 ÷ 10
c. 12,000 ÷ 100	d. 450,000 ÷ 100
e. 700,000 ÷ 1,000	f. 530,000 ÷ 100

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

a. 12,000 ÷ 30 = 12,000 ÷ 10 ÷ 3 = 1,200 ÷ 3 = 400	b. 12,000 ÷ 300	c. 12,000 ÷ 3,000
d. 560,000 ÷ 70	e. 560,000 ÷ 700	f. 560,000 ÷ 7,000
g. 28,000 ÷ 40	h. 450,000 ÷ 500	i. 810,000 ÷ 9,000

3. The floor of a rectangular banquet hall has an area of 3,600 m^2. The length is 90 m.

   a. What is the width of the banquet hall?

   b. A square banquet hall has the same area. What is the length of the room?

   c. 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 divided by 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 divided by 8,000? What is the quotient?

Name _____ Date _____

1. Divide. Draw place value 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 ÷ 10	b. 450 ÷ 10
c. 18,000 ÷ 100	d. 730,000 ÷ 100
e. 900,000 ÷ 1,000	f. 680,000 ÷ 1,000

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

a. 18,000 ÷ 20 = 18,000 ÷ 10 ÷ 2 = 1,800 ÷ 2 = 900	b. 18,000 ÷ 200	c. 18,000 ÷ 2,000
d. 420,000 ÷ 60	e. 420,000 ÷ 600	f. 420,000 ÷ 6,000
g. 24,000 ÷ 30	h. 560,000 ÷ 700	i. 450,000 ÷ 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.

   a. 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?

   b. 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.

a. 609 ÷ 21 ≈ 600 ÷ 20 = 30	b. 913 ÷ 29 ≈ _____ ÷ _____ = _____	c. 826 ÷ 37 ≈ _____ ÷ _____ = _____
d. 141 ÷ 73 ≈ _____ ÷ _____ = _____	e. 241 ÷ 58 ≈ _____ ÷ _____ = _____	f. 482 ÷ 62 ≈ _____ ÷ _____ = _____
g. 656 ÷ 81 ≈ _____ ÷ _____ = _____	h. 799 ÷ 99 ≈ _____ ÷ _____ = _____	i. 635 ÷ 95 ≈ _____ ÷ _____ = _____
j. 311 ÷ 76 ≈ _____ ÷ _____ = _____	k. 648 ÷ 83 ≈ _____ ÷ _____ = _____	l. 143 ÷ 35 ≈ _____ ÷ _____ = _____
m. 525 ÷ 25 ≈ _____ ÷ _____ = _____	n. 552 ÷ 85 ≈ _____ ÷ _____ = _____	o. 667 ÷ 11 ≈ _____ ÷ _____ = _____

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 its budget. Explain your thinking.

3. Jackson estimated 637 ÷ 78 as 640 ÷ 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.

a. 821 ÷ 41 ≈ 800 ÷ 40 = 20	b. 617 ÷ 23 ≈ _____ ÷ _____ = _____	c. 821 ÷ 39 ≈ _____ ÷ _____ = _____
d. 482 ÷ 52 ≈ _____ ÷ _____ = _____	e. 531 ÷ 48 ≈ _____ ÷ _____ = _____	f. 141 ÷ 73 ≈ _____ ÷ _____ = _____
g. 476 ÷ 81 ≈ _____ ÷ _____ = _____	h. 645 ÷ 69 ≈ _____ ÷ _____ = _____	i. 599 ÷ 99 ≈ _____ ÷ _____ = _____
j. 301 ÷ 26 ≈ _____ ÷ _____ = _____	k. 729 ÷ 81 ≈ _____ ÷ _____ = _____	l. 636 ÷ 25 ≈ _____ ÷ _____ = _____
m. 835 ÷ 89 ≈ _____ ÷ _____ = _____	n. 345 ÷ 72 ≈ _____ ÷ _____ = _____	o. 559 ÷ 11 ≈ _____ ÷ _____ = _____

2. Mrs. Johnson spent $611 buying lunch for 78 students. If all the lunches cost the same, 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 quotients for the following problems. The first one is done for you.

a. 5,738 ÷ 21 ≈ 6,000 ÷ 20 = 300	b. 2,659 ÷ 28 ≈ _____ ÷ _____ = _____	c. 9,155 ÷ 34 ≈ _____ ÷ _____ = _____
d. 1,463 ÷ 53 ≈ _____ ÷ _____ = _____	e. 2,525 ÷ 64 ≈ _____ ÷ _____ = _____	f. 2,271 ÷ 72 ≈ _____ ÷ _____ = _____
g. 4,901 ÷ 75 ≈ _____ ÷ _____ = _____	h. 8,515 ÷ 81 ≈ _____ ÷ _____ = _____	i. 8,515 ÷ 89 ≈ _____ ÷ _____ = _____
j. 3,925 ÷ 68 ≈ _____ ÷ _____ = _____	k. 5,124 ÷ 81 ≈ _____ ÷ _____ = _____	l. 4,945 ÷ 93 ≈ _____ ÷ _____ = _____
m. 5,397 ÷ 94 ≈ _____ ÷ _____ = _____	n. 6,918 ÷ 86 ≈ _____ ÷ _____ = _____	o. 2,806 ÷ 15 ≈ _____ ÷ _____ = _____

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.

   a. If each app used the same amount of space, about how many MB of memory did each app use? Show how you estimated.

   b. 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 quotients for the following problems. The first one is done for you.

a. 8,328 ÷ 41 ≈ 8,000 ÷ 40 = 200	b. 2,109 ÷ 23 ≈ _____ ÷ _____ = _____	c. 8,215 ÷ 38 ≈ _____ ÷ _____ = _____
d. 3,861 ÷ 59 ≈ _____ ÷ _____ = _____	e. 2,899 ÷ 66 ≈ _____ ÷ _____ = _____	f. 5,576 ÷ 92 ≈ _____ ÷ _____ = _____
g. 5,086 ÷ 73 ≈ _____ ÷ _____ = _____	h. 8,432 ÷ 81 ≈ _____ ÷ _____ = _____	i. 9,032 ÷ 89 ≈ _____ ÷ _____ = _____
j. 2,759 ÷ 48 ≈ _____ ÷ _____ = _____	k. 8,194 ÷ 91 ≈ _____ ÷ _____ = _____	l. 4,368 ÷ 63 ≈ _____ ÷ _____ = _____
m. 6,537 ÷ 74 ≈ _____ ÷ _____ = _____	n. 4,998 ÷ 48 ≈ _____ ÷ _____ = _____	o. 6,106 ÷ 25 ≈ _____ ÷ _____ = _____

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, and then check. The first problem is done for you.

a. 41 ÷ 30

$$\begin{array}{r} \quad 1 \text{ R } 11 \\ 30\overline{)41} \\ -\,30 \\ \hline 11 \end{array}$$

Check:

30 × 1 = 30
30 + 11 = 41

b. 80 ÷ 30

c. 71 ÷ 50

d. 270 ÷ 30

e. 643 ÷ 80

f. 215 ÷ 90

2. Terry says the solution to 299 ÷ 40 is 6 with a remainder of 59. His work is shown below. Explain Terry's error in thinking, and then find the correct quotient using the space on the right.

```
      6
40 | 299
   - 240
     59
```

```
40 | 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 does he switch strokes during the first half of the race?

Name _____ Date _____

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

a. 71 ÷ 20

$$\begin{array}{rr|ll} & & 3 & \text{R } 11 \\ 2 & 0 & 7 & 1 \\ & - & 6 & 0 \\ \hline & & 1 & 1 \end{array}$$

Check:

20 × 3 = 60
60 + 11 = 71

b. 90 ÷ 40

c. 95 ÷ 60

d. 280 ÷ 30

e. 437 ÷ 60

f. 346 ÷ 80

2. A number divided by 40 has a quotient of 6 with a remainder of 16. Find the number.

3. A shipment of 288 reams of paper was delivered. Each of the 30 classrooms received an equal share of the paper. Any extra reams of paper were stored. After the paper was distributed to the classrooms, how many reams of paper were stored?

4. How many groups of sixty are in two hundred forty-four?

Name _____ Date _____

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

a. 65 ÷ 17

$$\begin{array}{r} 3\ \text{R}\ 14 \\ 17\overline{)\,65} \\ -\ 51 \\ \hline 14 \end{array}$$

Check:

$17 \times 3 = 51$

$51 + 14 = 65$

b. 49 ÷ 21

c. 78 ÷ 39

d. 84 ÷ 32

e. 77 ÷ 25

f. 68 ÷ 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:	Linda's Work:	Your Work:
2 40 ⟌ 80	2 43 ⟌ 82 - 86 ??	43 ⟌ 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 ÷ 31

```
       2 R 10
31 | 7 2
   - 6 2
     1 0
```

Check:

$31 \times 2 = 62$

$62 + 10 = 72$

b. 89 ÷ 21

c. 94 ÷ 33

d. 67 ÷ 19

e. 79 ÷ 25

f. 83 ÷ 21

2. A 91 square foot bathroom has a length of 13 feet. What is the width of the bathroom?

3. While preparing for a morning conference, Principal Corsetti is laying out 8 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 ÷ 47

$$\begin{array}{r} \quad 5\ \text{R}\ 23 \\ 47\overline{)\,258} \\ -\ 235 \\ \hline \quad 23 \end{array}$$

Check:

47 × 5 = 235

235 + 23 = 258

   b. 148 ÷ 67

   c. 591 ÷ 73

   d. 759 ÷ 94

e. 653 ÷ 74

f. 257 ÷ 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.

```
      8
58 | 475
   - 464
     11
```

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?

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's 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 ÷ 21

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

Check:

21 × 6 = 126

126 + 3 = 129

b. 158 ÷ 37

c. 261 ÷ 49

d. 574 ÷ 82

e. 464 ÷ 58

f. 640 ÷ 79

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 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 ÷ 17

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

Check:

34 × 17 = 578

578 + 2 = 580

b. 730 ÷ 32

c. 940 ÷ 28

d. 553 ÷ 23

e. 704 ÷ 46

f. 614 ÷ 15

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

$$
\begin{array}{r|l}
 & 13 \\
\hline
48 & 664 \\
- & 48 \\
\hline
 & 184 \\
 & -144 \\
\hline
 & 40
\end{array}
$$

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 ÷ 21

$$\begin{array}{r} 23\ R\ 4 \\ 21\overline{)\,487} \\ -\ 42 \\ \hline 67 \\ -\ 63 \\ \hline 4 \end{array}$$

Check:

21 × 23 = 483

483 + 4 = 487

b. 485 ÷ 15

c. 700 ÷ 21

d. 399 ÷ 31

e. 820 ÷ 42

f. 908 ÷ 56

2. When dividing 878 by 31, a student finds a quotient of 28 with a remainder of 11. Check the student's work, and use the check to find the error in the 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 ÷ 23

b. 4,368 ÷ 52

c. 7,242 ÷ 34

d. 3,164 ÷ 45

e. 9,152 ÷ 29

f. 4,424 ÷ 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 has 1,944 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 ÷ 41

b. 1,495 ÷ 45

c. 6,691 ÷ 28

d. 2,625 ÷ 32

e. 2,409 ÷ 19

f. 5,821 ÷ 62

2. A political gathering in South America was attended by 7,910 people. Each of South America's 14 countries was equally represented. How many representatives attended from each country?

3. A candy company packages caramel into containers that hold 32 fluid ounces. In the last batch, 1,848 fluid ounces of caramel were made. How many containers were needed for this batch?

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 ÷ 6 = 0.2

b. 1.2 ÷ 60 = (1.2 ÷ 6) ÷ 10 = 0.2 ÷ 10 = 0.02

c. 2.4 ÷ 4 = _____

d. 2.4 ÷ 40 = _____

e. 14.7 ÷ 7 = _____

f. 14.7 ÷ 70 = _____

g. 0.34 ÷ 2 = _____

h. 3.4 ÷ 20 = _____

i. 0.45 ÷ 9 = _____

j. 0.45 ÷ 90 = _____

k. 3.45 ÷ 3 = _____

l. 34.5 ÷ 300 = _____

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

   a. $46.5 \div 5 = 9.3$

      $46.5 \div 50 =$ _____

   b. $0.51 \div 3 = 0.17$

      $0.51 \div 30 =$ _____

   c. $29.4 \div 70 = 0.42$

      $29.4 \div 7 =$ _____

   d. $13.6 \div 40 = 0.34$

      $13.6 \div 4 =$ _____

3. Twenty 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 every other division sentence in two steps. The first two have been done for you.

a. $1.8 \div 6 = 0.3$

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

c. $2.4 \div 8 =$ _____

d. $2.4 \div 80 =$ _____

e. $14.6 \div 2 =$ _____

f. $14.6 \div 20 =$ _____

g. $0.8 \div 4 =$ _____

h. $80 \div 400 =$ _____

i. $0.56 \div 7 =$ _____

j. $0.56 \div 70 =$ _____

k. $9.45 \div 9 =$ _____

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 ÷ 80 = 0.82

      65.6 ÷ 8 = _____

   b. 2.5 ÷ 50 = 0.05

      2.5 ÷ 5 = _____

   c. 19.2 ÷ 40 = 0.48

      19.2 ÷ 4 = _____

   d. 39.6 ÷ 6 = 6.6

      39.6 ÷ 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.

   a. Estimate how many miles he bikes in one day.

   b. If Edward continues his routine of biking to school, about how many 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.

   a. About how much does one bag of popcorn cost?

   b. 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. The bag of toy animals cost $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.

   a. Estimate how many gallons he drank in one day.

   b. Estimate how many gallons he drank in one week.

   c. About how many days altogether will it take him to drink 20 gallons?

Name _____ Date _____

1. 156 ÷ 24 and 102 ÷ 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 ÷ 13

   b. 62.79 ÷ 23

   c. 12.21 ÷ 11

   d. 6.89 ÷ 13

e. 249.6 ÷ 52

f. 24.96 ÷ 52

g. 300.9 ÷ 59

h. 30.09 ÷ 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?

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 ÷ 22

   b. 97.28 ÷ 19

   c. 77.14 ÷ 38

   d. 12.18 ÷ 29

3. Divide.

   a. 97.58 ÷ 34

   b. 55.35 ÷ 45

4. Use the equations on the left to solve the problems on the right. Explain how you decided where to place the decimal in the quotient.

   a. 520.3 ÷ 43 = 12.1 52.03 ÷ 43 = _____

   b. 19.08 ÷ 36 = 0.53 190.8 ÷ 36 = _____

5. You can look up information on the world's tallest buildings at http://www.infoplease.com/ipa/A0001338.html.

   a. The Aon Centre in Chicago, Illinois, is one of the world's tallest buildings. Built in 1973, it is 1,136 feet high and has 80 stories. If each story is of equal height, how tall is each story?

   b. Burj al Arab Hotel, another one of the world's tallest buildings, was finished in 1999. Located in Dubai, it is 1,053 feet high with 60 stories. If each floor is the same height, how much taller or shorter is each floor than the height of the floors in the Aon Center?

Name _____ Date _____

1. Divide. Check your work with multiplication.

a. 5.6 ÷ 16

b. 21 ÷ 14

c. 24 ÷ 48

d. 36 ÷ 24

e. 81 ÷ 54

f. 15.6 ÷ 15

g. 5.4 ÷ 15

h. 16.12 ÷ 52

i. 2.8 ÷ 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. Check your work with multiplication.

   a. 7 ÷ 28

   b. 51 ÷ 25

   c. 6.5 ÷ 13

   d. 132.16 ÷ 16

   e. 561.68 ÷ 28

   f. 604.8 ÷ 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 many liters of lemonade would be in 7 pitchers?

Name _____ Date _____

1. Ava is saving for a new computer that costs $1,218. She has already saved half of the money. Ava earns $14.00 per hour. How many hours must Ava work in order to save the rest of the money?

2. Michael has a collection of 1,404 sports cards. He hopes to sell the collection in packs of 36 cards and make $633.75 when all the packs are sold. If each pack is priced the same, how much should Michael charge per pack?

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?

Name _____ Date _____

1. Mr. Rice needs to replace the 166.25 ft of edging on the flower beds in his backyard. The edging is sold in lengths of 19 ft each. How many lengths of edging will Mr. Rice need to purchase?

2. Olivia is making granola bars. She will use 17.9 ounces of pistachios, 12.6 ounces of almonds, 12.5 ounces of walnuts, and 12.5 ounces of cashews. This amount makes 25 bars. How many ounces of nuts are in each granola bar?

3. Adam has 16.45 kg of flour, and he uses 6.4 kg to make hot cross buns. The remaining flour is exactly enough to make 15 batches of scones. How much flour, in kg, will be in each batch of scones?

4. There are 90 fifth-grade students going on a field trip. Each student gives the teacher $9.25 to cover admission to the theater and for lunch. Admission for all of the students will cost $315, and each student will get an equal amount to spend on lunch. How much will each fifth grader get to spend on lunch?

5. Ben is making math manipulatives to sell. He wants 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 _____

Solve.

1. Lamar has 1,354.5 kilograms of potatoes to deliver equally 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 fluid oz of detergent each week for her laundry. If there are 75 fluid 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?

Name _____ Date _____

Solve.

1. Michelle wants to save $150 for a trip to the Six Flags amusement park. If she saves $12 each week, how many weeks will it take her to save enough money for the trip?

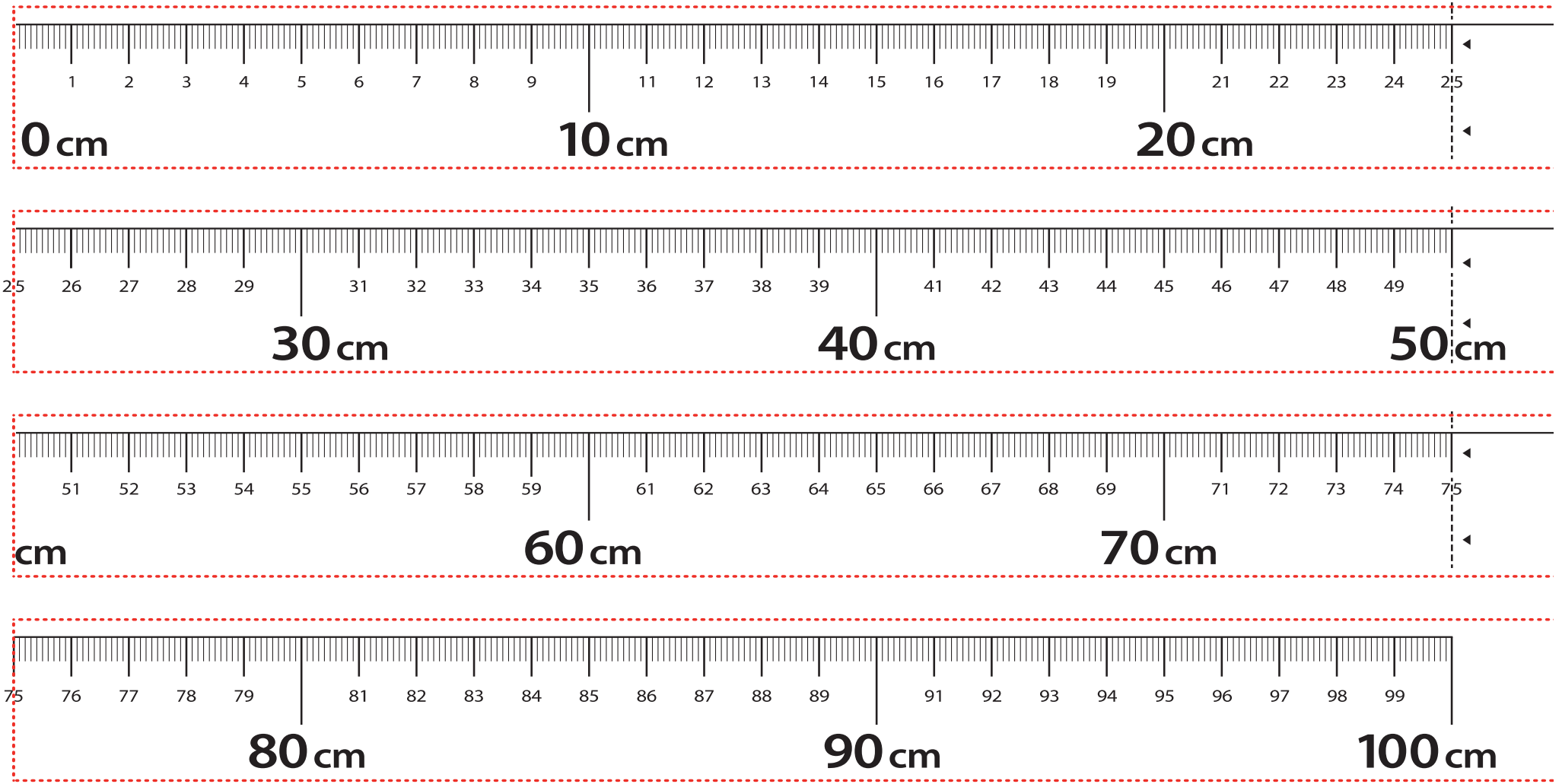
2. Karen works for 85 hours throughout a two-week period. She earns $1,891.25 throughout this period. How much does Karen earn for 8 hours of work?

3. The area of a rectangle is 256.5 m^2. If the length is 18 m, what is the perimeter of the rectangle?

4. Tyler baked 702 cookies. He sold them in boxes of 18. After selling all of the boxes of cookies for the same amount each, 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?

Cut Out Packet



meter strip

LEGEND ------ CUT – – – – ALIGN EDGE