

MSP

Grade 5 Module 2

Lesson Refreshers

&

Homework Starters

Name _____

Date _____

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

a. $43 \times 30 =$ _____

Think: 43 ones \times 3 tens = _____ tens

$43 \times 30 =$ _____

b. $430 \times 30 =$ _____

Think: 43 tens \times 3 tens = 129 hundreds \rightarrow *tens \times tens = hundreds

$430 \times 30 =$ 12,900

$10^2 \times 10^2 = 100^2$

c. $830 \times 20 =$ _____

Think: 83 tens \times 2 tens = 166 _____

$830 \times 20 =$ _____

* 43 tens = 430 * $43 \times 3 = 129$
 3 tens = 30 12,900

d. $4,400 \times 400 =$ _____

44 hundreds \times 4 hundreds = 176 ten-thousands

$4,400 \times 400 =$ 1,760,000

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

False. I can re-write $24 \times 10 \times 90$ as $24 \times 9 \times 100$
 The second equation can be re-written
 as $24 \times 9 \times 1,000$. $24 \times 9 \times 100 \neq 24 \times 9 \times 1,000$

Name _____

Date _____

1. Round the factors to estimate the products.

a. $697 \times 82 \approx \underline{700} \times \underline{80} = \underline{56,000}$

A reasonable estimate for 697×82 is 56,000.

b. $5,897 \times 67 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

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

c. $8,840 \times 45 \approx \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

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

① Round each number to the highest place value, so there is 1 digit and the rest are zeroes.
 ② multiply the 2 digits.
 ③ Count up the number of zeroes in each, write that many zeroes in the product (answer).

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

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

PT

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.

$8,146 \times 12$

$81,467 \times 121$

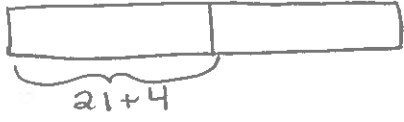
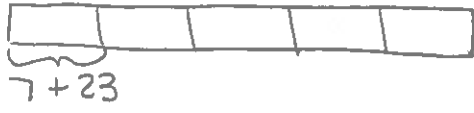

$8,146 \times 121$

$81,477 \times 1,217$

Name _____

Date _____

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

<p>a. The sum of 21 and 4, doubled</p>  <p>$(21+4) \times 2$</p>	<p>b. 5 times the sum of 7 and 23</p>  <p>$5 \times (7+23)$</p>
<p>c. 2 times the difference between 49.5 and 37.5</p>	<p>d. The sum of 3 fifteens and 4 twos</p>  <p>$(3 \times 15) + (4 \times 2)$</p>
<p>e. The difference between 9 thirty-sevens and 8 thirty-sevens</p>	<p>f. Triple the sum of 45 and 55</p>

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
 *commutative property - choice of unit does not change product
 c. 34×89

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

56×31
 \neq
 35×26

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

$35 \times (20 + 60)$

*distributive property - multiply one factor by sum of parts of the other factor
 $34 \times (90 - 1)$

89 thirty-fours

$\rightarrow 35 \times 80$
 \neq
 35×26

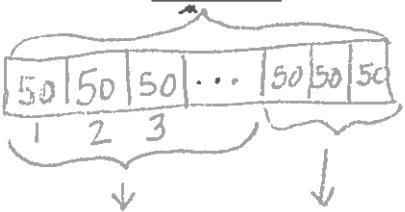
HELP

$34 \times (80 + 9)$

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

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.

<p>a. $19 \times 50 =$ _____ fifties</p> <div style="text-align: center; margin: 10px 0;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 5px;">50</td> <td style="padding: 5px;">50</td> <td style="padding: 5px;">50</td> <td style="padding: 5px;">...</td> <td style="padding: 5px;">50</td> <td style="padding: 5px; border: 2px solid black; text-align: center;">50</td> </tr> <tr> <td style="padding: 5px;">1</td> <td style="padding: 5px;">2</td> <td style="padding: 5px;">3</td> <td style="padding: 5px;">...</td> <td style="padding: 5px;">19</td> <td style="padding: 5px;">20</td> </tr> </table> </div> <p>Think: 20 fifties – 1 fifty</p> <p>= (_____ \times 50) – (_____ \times 50)</p> <p>= _____ – _____</p> <p>= _____</p>	50	50	50	...	50	50	1	2	3	...	19	20	<p>b. $11 \times 26 =$ _____ twenty-sixes</p> <p>Think: _____ twenty-sixes + _____ twenty-six</p> <p>= (_____ \times 26) + (_____ \times 26)</p> <p>= _____ + _____</p> <p>= _____</p>
50	50	50	...	50	50								
1	2	3	...	19	20								

<p>c. $19 \times 11 = 19$ _____</p> <p>Think: 20 _____ $- 1$ _____</p> <p>$= (20 \times \underline{\hspace{2cm}}) - (1 \times \underline{\hspace{2cm}})$</p> <p>$= \underline{\hspace{2cm}} - \underline{\hspace{2cm}}$</p> <p>$= \underline{\hspace{2cm}}$</p>	<p>d. $50 \times 13 = 13$ <u>fifties</u></p>  <p>Think: 10 <u>fifties</u> $+ 3$ <u>fifties</u></p> <p>$= (10 \times \underline{50}) + (3 \times \underline{50})$</p> <p>$= \underline{500} + \underline{150}$</p> <p>$= \underline{650}$</p>
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101P

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 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.

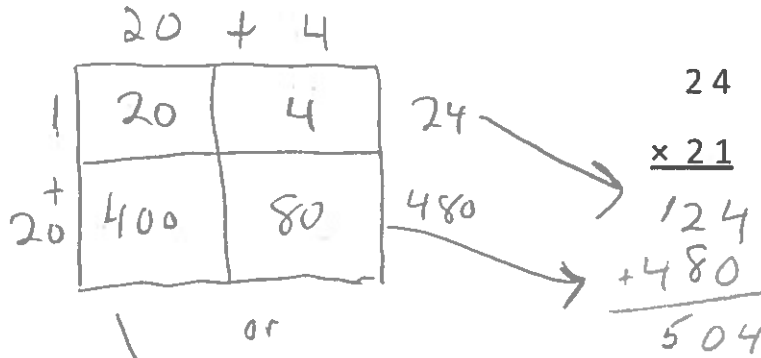
Name _____

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 in the algorithm.

a. $24 \times 21 =$ _____

$$\begin{array}{r} 480 \\ + 24 \\ \hline 504 \end{array}$$

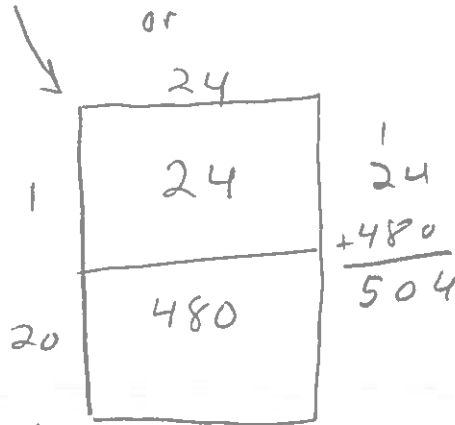


$$\begin{array}{r} 24 \\ \times 21 \\ \hline 124 \\ + 480 \\ \hline 504 \end{array}$$

PK

b. ~~$242 \times 21 =$ _____~~

- 1) label rectangle with 24×21
- 2) keep 24 together and separate 21 as 20×1
- 3) multiply 24×1 and 20×24
- 4) take each product and add together.



$$\begin{array}{r} 24 \\ + 480 \\ \hline 504 \end{array}$$

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

PK

2. Solve using the standard algorithm.

a. $314 \times 22 =$ _____

b. $413 \times 22 =$ _____

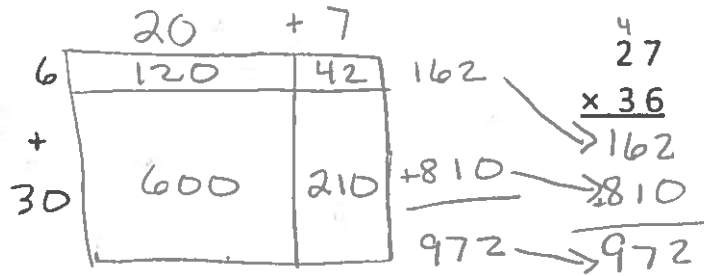
c. $213 \times 32 =$ _____

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



- ① multiply 6×27 .
- ② multiply 30×27 .
- ③ add

b. 527×36

$$\begin{array}{r} 527 \\ \times 36 \\ \hline \end{array}$$

2. Solve using the standard algorithm.

a. 649×53

$$\begin{array}{r} 649 \\ \times 53 \\ \hline 1947 \\ + 35450 \\ \hline 37,397 \end{array}$$

① multiply 3×649

② multiply 50×649

③ Add

b. 496×53

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

$200 + 70 + 3$

6	1200	420	18	$1,638$	→	$1,638$
+						
40	8000	2800	120	$10,920$	→	$10,920$
+						
300	60000	21,000	900	$+81,900$	→	$+81,900$
				$94,458$		

- ① Multiply 6×273 .
- ② Multiply 40×273 .
- ③ Multiply 300×273 .
- ④ Add.

$$\begin{array}{r}
 273 \\
 \times 346 \\
 \hline
 1638 \\
 10920 \\
 +81900 \\
 \hline
 94458
 \end{array}$$

b. 273×306

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

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

Name _____

Date _____

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

Round number to the largest place value

<p>a. 312×149</p> <p>$\approx 300 \times 100$ $= 30,000$</p> $\begin{array}{r} 312 \\ \times 149 \\ \hline \end{array}$	<p>b. 743×295 \swarrow</p> <p>$= 700 \times 300$ $= 210,000$</p> $\begin{array}{r} 743 \\ \times 295 \\ \hline 3715 \\ 66870 \\ +148600 \\ \hline 219,185 \end{array}$ PK	<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>

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?

Circle the #s
 Underline the imp. info
 Box the question/task
 Eliminate unneeded info

- ① Find out how many stickers Jeffery has total. 203 sheets
 x 12 stickers each sheet

$$\begin{array}{r} 0406 \\ +2030 \\ \hline 2436 \end{array}$$
 total stickers
- multiply 203 by 2
 - cross out 2 and use a zero to hold place since ones place is completed
 - multiply 203 by 1
 - add partial products

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?

- ② To ans. question/task: SUBTRACT → remaining
- cannot subtract 7 from 6
 ↳ borrow 10 from the 3 so 6 becomes 16, 16-7
 - subtract 0 from 2
 - cannot subtract 9 from 4
 ↳ borrow 10 from the 2 so 4 becomes 14, 14-9
 - subtract 0 from 1
- $$\begin{array}{r} 214 \overset{2}{\cancel{2}}16 \text{ total stickers} \\ - 907 \text{ stickers given away} \\ \hline 1529 \text{ stickers left} \end{array}$$

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

Jeffery has 1,529 stickers left.

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.

Name _____

Date _____

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

a. $53 \times 1.2 \approx$ _____ \times _____ $=$ _____

1 2 (tenths)

$\times 53$

b. $2.1 \times 82 \approx$ _____ \times _____ $=$ _____

2 1 (tenths)

$\times 82$

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

a. $4.2 \times 34 \approx$ 4 \times 30 $=$ 120

b. $65 \times 5.8 \approx$ _____ \times _____ $=$ _____

4 2 (tenths)

5 8 (tenths)

$$\begin{array}{r}
 \times 34 \\
 168 \\
 + 1260 \\
 \hline
 1428 \text{ (tenths)} = 142.8
 \end{array}$$

$\times 65$

c. $3.3 \times 16 = \underline{\quad} \times \underline{\quad} = \underline{\quad}$

d. $15.6 \times 17 = \underline{\quad} \times \underline{\quad} = \underline{\quad}$

e. $73 \times 2.4 \approx \underline{\quad} \times \underline{\quad} = \underline{\quad}$

f. $193.5 \times 57 = \underline{\quad} \times \underline{\quad} = \underline{\quad}$

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?

R

3.2	3.2	3.2	3.2	3.2	1.5	1.5
M	T	W	Th	F	Sa	Su

weekdays weekend

$(3.2 \times 5) + (1.5 \times 2) =$

$16 + 3 =$

19 miles in one week

R

19	19	19	19	19	19
----	----	----	----	----	----

$19 \times 6 = 114$

Rachel will run 114 miles in six weeks

$$\begin{array}{r} 32 \text{ (tenths)} \\ \times 5 \\ \hline 160 \text{ (tenths)} = 16.0 = 16 \end{array}$$

$$\begin{array}{r} 1.5 \text{ (tenths)} \\ \times 2 \\ \hline 30 \text{ (tenths)} = 3.0 = 3 \end{array}$$

$$\begin{array}{r} 5 \\ 19 \\ \times 6 \\ \hline 114 \end{array}$$

KSP

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

Remember:
Keep place
values lined up.

$$\begin{array}{r}
 \$1.57 \\
 \times 27 \\
 \hline
 10399 \\
 + 3140 \\
 \hline
 \$42.39
 \end{array}$$

Don't forget:
Put the zero in
the ones place when
multiplying the
tens place

To place the decimal point, count the # of digits after the decimal point in the problem (two → 5 and 7). So, there should be two digits after the decimal point in the product.

It would cost \$42.39 for 27 slices of pizza. (3 and 9)

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. $24 \times 2.31 \approx \underline{20} \times \underline{2} = \underline{40}$

$200 + 30 + 1$ (hundredths)

4	800	120	4	924 hundredths
20	4000	600	20	

$\underline{5544}$ hundredths

$$\begin{array}{r} 2.31 \\ \times 24 \\ \hline 924 \\ +4620 \\ \hline 55.44 \end{array}$$

b. $5.42 \times 305 = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

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

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

a. $1.23 \times 21 = \underline{1} \times \underline{20} = \underline{20}$

$$\begin{array}{r} 1.23 \\ \times 21 \\ \hline 123 \\ +2460 \\ \hline 25.83 \end{array}$$

b. $3.2 \times 41 = \underline{3} \times \underline{40} = \underline{120}$

$$\begin{array}{r} 3.2 \\ \times 41 \\ \hline 32 \\ +1280 \\ \hline 131.2 \end{array}$$

c. $0.32 \times 41 = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

d. $0.54 \times 62 = \underline{\hspace{2cm}} \times \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Make sure the decimal is correctly placed. Use the estimate to see if the product is reasonable, that is, are both products in tens, 66 hundreds, thousands?

Name _____

Date _____

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

<p>a. Convert weeks to days.</p> <p>6 weeks = $6 \times (1 \text{ week})$</p> <p>= $6 \times (7 \text{ days})$</p> <p>= 42 days</p>	<p>b. Convert years to days.</p> <p>7 years = _____ \times (_____ year)</p> <p>= _____ \times (_____ days)</p> <p>= _____ days</p>
<p>c. Convert meters to centimeters.</p> <p>4.5 m = _____ \times (_____ m)</p> <p>= _____ \times (_____ cm)</p> <p>= _____ cm</p>	<p>d. Convert pounds to ounces.</p> <p>12.6 pounds = $12.6 \times (1 \text{ lb.})$</p> <p>= $12.6 \times (16 \text{ oz})$</p> <p>= 201.6 oz</p> <p>8 12.6 tenths</p> <p>$\times \quad 16$</p> <p>$\quad 756$</p> <p>$+ 1260$</p> <p>$\hline 201.6 \text{ tenths} = 201.6$</p>
<p>e. Convert kilograms to grams.</p> <p>3.09 kg</p>	<p>f. Convert yards to inches.</p> <p>245 yd</p>

*The conversion factor is 16 as 16 ounces is equivalent to one pound. You multiply by the conversion factor because you are changing a larger size unit of measure (lb) to a smaller size unit of measure (oz)

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

<p>a. Convert the number of hours in a day to minutes.</p> $24 \text{ hours} = 24 \times (1 \text{ hour})$ $= 24 \times (60 \text{ minutes})$ $= 1,440 \text{ minutes}$ <p>One day has 24 hours, which is the same as 1,440 minutes.</p>	<p>b. A newborn giraffe weighs about 65 kilograms. How much does it weigh in grams?</p>
<p>c. The average height of a female giraffe is 4.6 meters. What is her height in centimeters?</p>	<p>d. The capacity of a beaker is 0.1 liter. Convert this to milliliters.</p>
<p>e. A pig weighs 9.8 pounds. Convert the pig's weight to ounces.</p>	<p>f. A marker is 0.13 meters long. What is the length in millimeters?</p> $0.13 \text{ m} = 0.13 \times (1 \text{ m})$ $= 0.13 \times (1,000 \text{ mm})$ $= 130 \text{ mm}$ <p>One marker is 0.13 meters long, which is the same as 130 millimeters.</p>

* The conversion factor is 1,000 because 1,000 mm is equivalent to 1 m

Name _____

Date _____

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

<p>a. Convert days to weeks.</p> <p>42 days = $42 \times (1 \text{ day})$</p> <p>= $42 \times \left(\frac{1}{7} \text{ week}\right)$</p> <p>= $\frac{42}{7} \text{ week}$</p> <p>= 6 weeks</p>	<p>b. Convert quarts to gallons.</p> <p>36 quarts = _____ $\times (1 \text{ quart})$</p> <p>= _____ $\times \left(\frac{1}{4} \text{ gallon}\right)$</p> <p>= _____ gallons</p> <p>= _____ gallons</p>
<p>c. Convert centimeters to meters.</p> <p>760 cm = _____ \times (_____ cm)</p> <p>= _____ \times (_____ m)</p> <p>= _____ m</p>	<p>d. Convert meters to kilometers.</p> <p>2,485 m = <u>2,485</u> \times (<u>1</u> m)</p> <p>= <u>2485</u> \times (0.001 km)</p> <p>= <u>2.485</u> km</p> <p><i>PK:</i></p> <p><u>2485</u> \times 0.001</p> <p>\leftarrow move decimal pt 3 places to the left</p>
<p>e. Convert grams to kilograms.</p> <p>3,090 g =</p>	<p>f. Convert milliliters to liters.</p> <p>205 mL =</p>

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

<p>a. The screen measures 36 inches. Convert 36 inches to feet.</p> $36 \text{ inches} = 36 \times (1 \text{ inch})$ $= 36 \times \left(\frac{1}{12} \text{ feet}\right)$ $= \frac{36}{12} \text{ feet}$ $= 3 \text{ feet}$ <p>The screen measures 36 inches or 3 feet.</p>	<p>b. A jug of juice holds 8 cups. Convert 8 cups to pints.</p>
<p>c. The length of the flower garden is 529 centimeters. What is its length in meters?</p> $529 \text{ cm} = \underline{\quad} \text{ m}$ $= 529 \times (1 \text{ cm})$ $= 529 \times (0.01 \text{ m})$ $= 5.29 \text{ m}$ <p>The flower garden measures 5.29 m P.K.</p>	<p>d. The capacity of a container is 2,060 milliliters. Convert this to liters.</p>
<p>e. A hippopotamus weighs 1,560,000 grams. Convert the hippopotamus' weight to kilograms.</p>	<p>f. The distance was 372,060 meters. Convert the distance to kilometers.</p>

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.

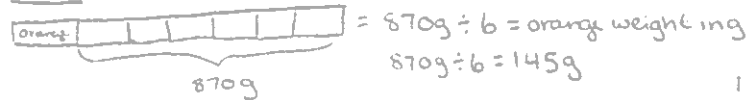
4. A pineapple is 7 times as heavy as an orange. The pineapple also weighs 870 grams more than the orange.

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

1 pineapple = 7 x weight of orange

1 pineapple = weight of orange + 870g

orange = orange



pineapple = 145 orange = 145g

$$\begin{array}{r} \times 7 \\ 1015 \\ \hline \end{array}$$

total weight of pineapple and orange = $\begin{array}{r} 1015 \\ + 0145 \\ \hline 1160 \end{array}$ g

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

1kg = 1000g
 — Kg = 1,160g

$$\begin{array}{r} 1,160 \\ \hline \end{array}$$

1.16 Kg is total weight of pineapple and orange.

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.

<p>a. $300 \div 10 = 30$</p>	<p>b. $450 \div 10$ $= 45 \div 1$ $= 45$</p>
<p>c. $18,000 \div 100 = 180$</p>	<p>d. $730,000 \div 100$</p>
<p>e. $900,000 \div 1,000$</p>	<p>f. $680,000 \div 1,000$ $= 680 \div 1$ $= 680$</p>

PT

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. $617 \div 23$ $\approx \underline{600} \div \underline{20}$ $= \underline{30}$ <i>PK</i></p>	<p>c. $821 \div 39$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>d. $482 \div 52$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>e. $531 \div 48$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>f. $141 \div 73$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>g. $476 \div 81$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>h. $645 \div 69$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>i. $599 \div 99$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>j. $301 \div 26$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>k. $729 \div 81$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>l. $636 \div 25$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>
<p>m. $835 \div 89$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>n. $345 \div 72$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>	<p>o. $559 \div 11$ $\approx \underline{\hspace{2cm}} \div \underline{\hspace{2cm}}$ $= \underline{\hspace{2cm}}$</p>

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?

$$\$611 \div 78 = \quad \$600 \div 75 = \$8.00$$

$$\$600 \div 75 = \$8.00$$

She spent approximately \$8.00 for each lunch

Round the number (dividend) to nearest hundred (\$600)

Find a benchmark number close to 78 that will result in a quotient with no remainder. P.K.

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.

<p>a. $8,328 \div 41$ $\approx 8,000 \div 40$ $= 200$</p>	<p>b. $2,109 \div 23$ $= \underline{2,000} \div \underline{20}$ $= \underline{100}$</p>	<p>c. $8,215 \div 38$ $= \underline{8,000} \div \underline{40}$ $= \underline{200}$</p>
<p>d. $3,861 \div 59$ $4,000 \div 60$ $\approx \underline{3,600} \div \underline{60}$ $= \underline{60}$</p>	<p>e. $2,899 \div 66$ $= \underline{3,000} \div \underline{60}$ $= \underline{50}$</p>	<p>f. $5,576 \div 92$ $= \underline{5,400} \div \underline{90}$ $= \underline{60}$</p>
<p>g. $5,086 \div 73$ $\approx \underline{4,900} \div \underline{70}$ $= \underline{70}$</p>	<p>h. $8,432 \div 81$ $= \underline{8,000} \div \underline{80}$ $= \underline{100}$</p>	<p>i. $9,032 \div 89$ $= \underline{9,000} \div \underline{90}$ $= \underline{100}$</p>
<p>j. $2,759 \div 48$ $\approx \underline{2,500} \div \underline{50}$ $= \underline{50}$</p>	<p>k. $8,194 \div 91$ $= \underline{8,100} \div \underline{90}$ $= \underline{90}$</p>	<p>l. $4,368 \div 63$ $= \underline{4,200} \div \underline{60}$ $= \underline{70}$</p>
<p>m. $6,537 \div 74$ $7,000 \div 70$ $\approx \underline{6,500} \div \underline{70}$ $= \underline{93} \underline{100}$</p>	<p>n. $4,998 \div 48$ $= \underline{5,000} \div \underline{50}$ $= \underline{100}$</p>	<p>o. $6,106 \div 25$ $= \underline{6,000} \div \underline{30}$ $= \underline{200}$</p>

Name _____

Date _____

1. Divide, and 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:

$$\begin{aligned} 20 \times 3 &= 60 \\ 60 + 11 &= 71 \end{aligned}$$

b. $90 \div 40$

c. $95 \div 60$

d. $280 \div 30$

e. $437 \div 60$

f. $346 \div 80$

$$\begin{array}{r} 4 \text{ R } 26 \\ 80 \overline{) 346} \\ \underline{- 320} \\ 26 \end{array}$$

$$\begin{aligned} 80 \times 4 &= 320 \\ \text{(multiply } 8 \times 4 &= 32 \times 10 = 320) \end{aligned}$$

$$320 + 26 = 346$$

Name _____ Date _____

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

a. $72 \div 31$

b. $89 \div 21$

$$\begin{array}{r} 2 \text{ R } 10 \\ 31 \overline{) 72} \\ \underline{- 62} \\ 10 \end{array}$$

Check:

$$31 \times 2 = 62$$

$$62 + 10 = 72$$

c. $94 \div 33$

d. $67 \div 19$

e. $79 \div 25$

f. $83 \div 21$

Check:

$$\begin{array}{r} 3 \text{ R } 20 \\ 21 \overline{) 83} \\ \underline{- 63} \\ 20 \end{array}$$

$$\begin{array}{r} 21 \\ \times 3 \\ \hline 63 \\ + 20 \\ \hline 83 \end{array}$$

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

$$A = l \times w$$

$$91 \text{ft}^2 = 13 \times ?$$

$$\begin{array}{r} 7 \\ 13 \overline{)91} \\ \underline{-91} \\ 0 \end{array}$$

?

$$\boxed{\begin{array}{l} A = 91 \text{ft}^2 \\ 13 \text{ft} \end{array}}$$

The width of the bathroom is 7.

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?

e. $464 \div 58$

$$\begin{array}{r} 8 \\ 58 \overline{) 464} \\ \underline{-464} \\ 0 \end{array}$$

Check

$$\begin{array}{r} 58 \\ \times 8 \\ \hline 464 \end{array}$$

f. $640 \div 79$

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?

f. $908 \div 56$

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.

$$\begin{array}{r}
 28 \text{ R}10 \\
 31 \overline{)878} \\
 \underline{62} \\
 258 \\
 \underline{-248} \\
 10
 \end{array}$$

$$\begin{array}{r}
 28 \\
 \times 31 \\
 \hline
 28 \\
 840 \\
 \hline
 868 \\
 + 10 \\
 \hline
 878
 \end{array}$$

The error in the solution is that the student subtracted wrong to get the remainder.

- ① find correct answer first.
- ② Write what you notice about the correct + incorrect answer.

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. $9,962 \div 41$

b. $1,495 \div 45$

$$\begin{array}{r}
 33 \text{ R } 10 \\
 45 \overline{) 1,495} \\
 \underline{135} \\
 145 \\
 \underline{-135} \\
 10
 \end{array}$$

Check:

$$\begin{array}{r}
 45 \\
 \times 33 \\
 \hline
 135 \\
 1350 \\
 \hline
 1485 \\
 + 10 \\
 \hline
 1495
 \end{array}$$

c. $6,691 \div 28$

d. $2,625 \div 32$

e. $2,409 \div 19$

f. $5,821 \div 62$

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.

$$127.8 \text{ miles} \div 60 \text{ days} = \# \text{ of miles each day}$$

$$\begin{array}{r} 2.13 \\ 60 \overline{)127.80} \\ \underline{-120} \downarrow \\ 78 \downarrow \\ \underline{-60} \downarrow \\ 180 \downarrow \\ \underline{-180} \\ 000 \end{array}$$

Chris rode 2.13 miles each day.

b. How many miles did he bike over the course of two weeks?

1 week = 7 days
2 weeks = 14 days

$$2.13 \text{ miles per day} \times 14 \text{ days} = \# \text{ of miles in 2 weeks}$$

$$\begin{array}{r} 2.13 \\ \times 14 \\ \hline 0852 \\ +2130 \\ \hline 29.82 \end{array}$$

Chris rode 29.82 miles in 2 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. $3.53 \div 51 \approx$

$350 \text{ hundredths} \div 50 \approx 7 \text{ hundredths}$

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. $91.3 \div 42 \approx$

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. $75.9 \div 22$

$$\begin{array}{r} 3.45 \\ 22 \overline{) 75.90} \\ \underline{-66} \\ 99 \\ \underline{-88} \\ 110 \\ \underline{-110} \\ 0 \end{array}$$

(ck) 3.45

$$\begin{array}{r} 3.45 \\ \times 22 \\ \hline 690 \\ + 6900 \\ \hline 75.90 \end{array}$$

b. $97.28 \div 19$

- ① Multiply using the standard algorithm.
 ② Count the decimal places in the problem.
 ③ Put the decimal point in your product two places to the left and drop the zero

d. $12.18 \div 29$

(PK)

c. $77.14 \div 38$

3. Divide.

a. $97.58 \div 34$

b. $55.35 \div 45$

Name _____

Date _____

1. Divide. Check your work with multiplication.

a. $7 \div 28$

$$\begin{array}{r} 0.25 \\ 28 \overline{) 7.00} \\ \underline{-56} \\ 140 \\ \underline{-140} \\ 0 \end{array}$$

b. ~~$51 \div 25$~~

(ck) $\begin{array}{r} 24 \\ 0.25 \\ \times 28 \\ \hline 200 \\ +0500 \\ \hline 7.00 \end{array}$

c. $6.5 \div 13$

PK

d. $132.16 \div 16$

e. $561.68 \div 28$

f. $604.8 \div 36$

- 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?
- 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?
- 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 $\frac{1}{2}$ of the money. Ava earns \$14.00 per hour. How many hours must Ava work in order to save the rest of the money?

\$1,218 total cost of computer.

If Ava saved $\frac{1}{2}$ of the total cost she saved $\$1218 \div 2 = \609

$$\begin{array}{r} 609 \\ 2 \overline{)1218} \\ \underline{-12} \\ 01 \\ \underline{-0} \\ 18 \\ \underline{-18} \\ 0 \end{array}$$

Ava has to save \$609.

$\$609 \div \$14 = \#$ of hours she has to work.

Ava needs to work 43.5 more hours.

$$\begin{array}{r} 43.5 \\ 14 \overline{)609.0} \\ \underline{-56} \\ 49 \\ \underline{-42} \\ 70 \\ \underline{-70} \\ 0 \end{array}$$

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 _____

Solve.

- 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?

- 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?

- The area of a rectangle is 256.5 m². If the length is 18 m, what is the perimeter of the rectangle?

- 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?

702 cookies ÷ 18 cookies per box = # of boxes to sell

$$\begin{array}{r} 39 \\ 18 \overline{) 702} \\ \underline{54} \\ 162 \\ \underline{162} \\ 000 \end{array}$$

Tyler has 39 boxes to sell.

Total made = \$136.50

$\$136.50 \div 39 \text{ boxes} = \amount per box

Tyler sold each box for \$3.50

$$\begin{array}{r} 3.50 \\ 39 \overline{) 136.50} \\ \underline{-117} \\ 195 \\ \underline{-195} \\ 0000 \\ \underline{-0000} \\ 0000 \end{array}$$

- 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?