



Warm up Grade 6

Date: Dec. 10

Test

Thursday

Dec 13

Show work to find the product and quotient. (Use estimation to determine where the decimal place must go)

1)  $12.473 \times 7$

Estimate

$12 \times 7 = 84$

OR

$10 \times 7 = 70$

$$\begin{array}{r} 12.473 \\ \times 7 \\ \hline 87.311 \end{array}$$

2)  $3.618 \div 3$

Estimate

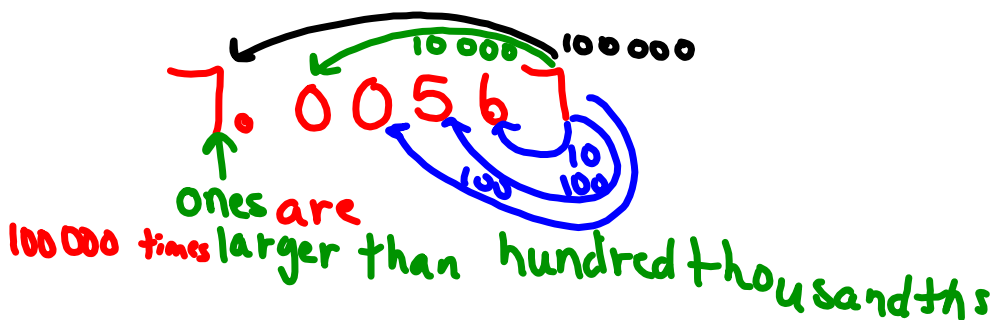
$3 \div 3 = 1$

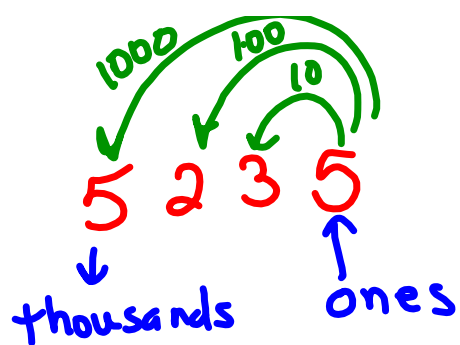
$$\begin{array}{r} 1.206 \\ 3 \overline{) 3.618} \\ \underline{3} \phantom{00} \\ 06 \phantom{0} \\ \underline{06} \phantom{0} \\ 018 \\ \underline{018} \\ 0 \end{array}$$

2) Given  $7.00567$ , what are the place values for each "7" and how

ones                      hundred thousandths

many times larger is one to the other?







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Date: \_\_\_\_\_

Show work to find the product and quotient. (Use estimation to determine where the decimal place must go)

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Est.  $10 \times 7 = 84$

$$\begin{array}{r} 12.473 \\ \times 7 \\ \hline 87.311 \end{array}$$

2)  $3.618 \div 3$

Est.  $3 \div 3 = 1$

$$\begin{array}{r} 1.206 \\ 3 \overline{) 3.618} \\ \underline{-3} \phantom{00} \\ 06 \phantom{0} \\ \underline{-6} \phantom{0} \\ 01 \phantom{0} \\ \underline{-0} \phantom{0} \\ 18 \\ \underline{-18} \\ 0 \end{array}$$

2) Given  $7.00567$ , what are the place values for each "7" and how

many times larger is one to the other?

1000

5 times



4. Divide. Multiply to check your answers.

a)  $27.025 \div 5$   
d)  $16.072 \div 8$

b)  $3.42 \div 6$   
e)  $30.9 \div 5$

c)  $7.735 \div 7$   
f)  $3.438 \div 6$

a) Step 1: Estimate

$25 \div 5 = 5$

Step 3:

$27.025 \div 5 = 5.405$

Step 2:  
Actual  
Answer

5	27025	5 x 4000
	20000	5 x 1000
-	7025	5 x 400
	5000	5 x 5
-	2025	
	2000	
-	25	
	25	
-	0	

5405

Step 4:  
Check by Multiplying

$5.405 \times 5 = 27.025$

c)  $6 \overline{) 3.42} = 0.57$

e)  $7 \overline{) 7.735} = 1.105$

d)  $8 \overline{) 16.072} = 2.009$

e)  $5 \overline{) 30.9} = 6.18$

f)  $6 \overline{) 3.438} = 0.573$



5. Estimate to choose the correct quotient for each division question.

Question	Possible Quotients
a) $8.124 \div 6$	1.354, 13.54, 135.4
b) $37.92 \div 3$	0.1264, 1.264, 12.64
c) $7.624 \div 8$	0.953, 9.53, 95.3

less than 1

6. Aqpiq Peter is a young Inuit speed skater from Nunavut. He is one of 3 First Nations athletes being showcased for the 2010 Vancouver Olympics. At practice, Aqpiq skated 2.75 km in 5 min. About how far did Aqpiq skate in 1 min?



$5 \overline{) 2.75} = 0.55$

Aqpiq skated 0.55 km in 1 min.

7. Eric cycled 2.25 km in 5 min.  
Josie cycled 2.72 km in 8 min.  
Who travelled farther in 1 min?  
Show your work.

Eric

$$\begin{array}{r} 0.45 \\ 5 \overline{) 2.25} \\ \underline{-2.0} \phantom{0} \\ 25 \\ \underline{-25} \\ 0 \end{array}$$

Eric 0.45 km in 1 min

Josie

$$\begin{array}{r} 0.34 \\ 8 \overline{) 2.72} \\ \underline{-2.4} \phantom{0} \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

Josie travelled  
0.34 km  
in 1 min

Eric travelled further

8. Sharma paid \$58.50 to board her cat at a kennel in Yellowknife for 5 days.  
Her friend Miles paid \$12.50 each day to board his cat at a different kennel for 5 days.  
Who paid the lesser amount?  
Explain how you know.

Sharma paid \$11.70 each day  
which is less than \$12.50  
Sharma paid less.

Sharma

$$\begin{array}{r} 11.70 \\ 5 \overline{) 58.50} \\ \underline{-50} \phantom{00} \\ 85 \\ \underline{-80} \phantom{0} \\ 50 \\ \underline{-50} \\ 00 \end{array}$$



9. The decimal point in some of these quotients is in the wrong place. Identify the mistakes, then write each quotient with the decimal point in the correct place.
- a)  $44.8 \div 8 = 0.56$   $40 \div 8 = 5$
  - b)  $14.805 \div 5 = 2.961$
  - c)  $3.15 \div 6 = 5.25$
  - d)  $8.127 \div 1 = 0.8127$

a) 5.6  
 c)  $3 \div 6$  is smaller than 1  
 0.525  
 b)  $15 \div 5 = 3$  over  
 d)  $8 \div 1 = 8$   
 d) 8.127



10. A student divided 1.374 by 4 and got 3.435.
- a) Without dividing, how do you know the answer is incorrect?
  - b) What do you think the student did wrong?
  - c) What is the correct answer? How can you check?

a)  $1 \div 4$  is going to be smaller than 1  
 b) Placed the decimal in the wrong spot  
 c)  $1.374 \div 4 = 0.3435$

$$\begin{array}{r} 0.3435 \\ 4 \overline{) 1.3740} \\ \underline{-1.2} \phantom{00} \\ 17 \\ \underline{-16} \phantom{0} \\ 14 \\ \underline{-12} \phantom{0} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

11. Write a story problem that can be solved by dividing 14.28 by 3.  
Trade problems with a classmate and solve your classmate's problem.

Kim paid \$14.28 for 3 dozens of cookies.  
How much did she pay for 1 dozen?

12. A square park has a perimeter of 14.984 km.  
How long is each side of the square?

$P = 4 \times S$   
 $S: \text{side} = P \div 4$   
 Each side is 3.735 km long

$$14.984 \div 4$$

$$\begin{array}{r} 3.735 \\ 4 \overline{) 14.940} \\ \underline{-12} \phantom{00} \\ 29 \\ \underline{-28} \phantom{0} \\ 14 \\ \underline{-12} \phantom{0} \\ 20 \\ \underline{-20} \\ 0 \end{array}$$

13. In good weather, Hannah rides her bike to school and back each day. One week, Hannah rode her bike on 4 days. That week, Hannah rode 10.832 km in total. The following week, she rode her bike all 5 days. How far did Hannah ride the second week?



Find km per day

$$\begin{array}{r} 2.708 \\ 4 \overline{) 10.832} \\ \underline{-8} \phantom{00} \\ 28 \\ \underline{-28} \phantom{0} \\ 03 \\ \underline{-03} \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

Hannah drives 2.708 km each day

For 5 days

$$\begin{array}{r} 2.708 \\ \times 5 \\ \hline 13.540 \end{array}$$

Hannah drives 13.54 km in 5 days

This is the one I use



Dividing decimals by a whole number

$$\begin{array}{r} 13.45 \\ \text{Dividend} \end{array} \div \begin{array}{r} 4 \\ \text{Divisor} \end{array}$$

Same as what we have been doing with long division.

Carrying zeros

- Divide the decimal number by considering it as a whole number by the given whole number.

$$4 \overline{) 13.45}$$

Always estimate to see if the quotient is reasonable

- Mark the decimal point in the quotient such that it has the same number of decimal places as in the decimal number (dividend).

$$4 \overline{) 13.45}$$

Then divide normally

If you have a remainder, you can always add zeros to the end of dividend, and it does not change the number. Then repeat

No remainders but decimal parts

$$9.467 \div 5$$

$$13.45 \div 4$$

You Try

Divide the following, with long division.

NO remainder just decimal part



a)

$$121. \div 8$$

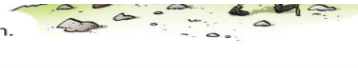
$$\begin{array}{r}
 15.125 \\
 8 \overline{) 121.000} \\
 \underline{-8} \phantom{0} \phantom{0} \phantom{0} \\
 4 \phantom{0} \phantom{0} \phantom{0} \\
 \underline{-40} \phantom{0} \phantom{0} \\
 0 \phantom{0} \phantom{0} \\
 \underline{-0} \phantom{0} \\
 0 \phantom{0} \\
 \underline{-0} \\
 00 \\
 \underline{-00} \\
 00 \\
 \underline{-00} \\
 00 \\
 \underline{-00} \\
 00 \\
 \underline{-00} \\
 00
 \end{array}$$

b)  $7.05 \div 2$

$$\begin{array}{r}
 3.525 \\
 2 \overline{) 7.050} \\
 \underline{-6} \phantom{0} \phantom{0} \\
 10 \phantom{0} \\
 \underline{-10} \phantom{0} \\
 05 \\
 \underline{-4} \phantom{0} \\
 10 \\
 \underline{-10} \\
 00 \\
 \underline{-00} \\
 00
 \end{array}$$

	<b>D</b> ivide ✓
	<b>M</b> ultiply ✓
	<b>S</b> ubtract ✓
	<b>B</b> ring Down ✓
	<b>R</b> epeat

- One morning, the hikers travelled 10.4 km in 3 h. About how far did the hikers travel in 1 h?



Divide:  $10.4 \div 3$   
Divide as whole numbers. Use short division.  
Write zeros in the dividend.

$$\begin{array}{r} 3 \ 4 \ 6 \ 6 \ 6 \\ 3 \overline{) 10.4000} \end{array}$$

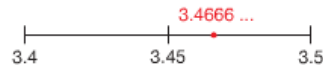
Sometimes you may never stop dividing, no matter how many zeros you write in the dividend.

Estimate to place the decimal point.  
The closest whole-number benchmark to 10.4 is 10.  
 $10 \div 3$  is a little more than 3.  
So, place the decimal point between the 3 and the 4;  
that is: 3.4666 ...

So,  $10.4 \div 3 = 3.4666 \dots$  This quotient is *approximate*.

The dots indicate that the decimal places go on forever.

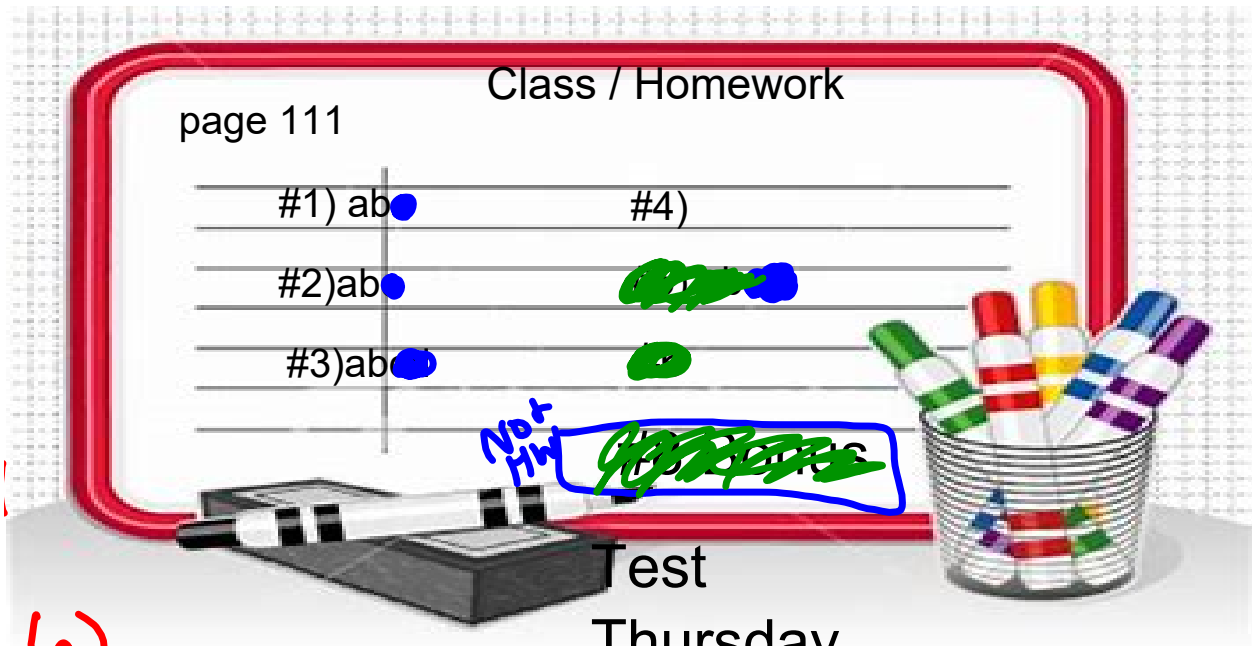
Since the distance was given to a tenth of a kilometre, we write the quotient to the closest tenth.  
 $3.4666 \dots$  is closer to 3.5 than to 3.4,  
so, write the quotient as 3.5.



The hikers travelled about 3.5 km in 1 h.

Check the answer by multiplying the quotient by the divisor.  
 $3.5 \times 3 = 10.5$   
10.5 is close to the dividend, 10.4.  
So, the answer is reasonable.





Test  
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1a)

$$\underline{4.4} \div 5$$

$$5 \div 5 = 1$$

Close to

$$0.88$$

$$88.0$$

$$8.80$$

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TIP

## Practice

1. Estimate to choose the correct quotient for each division question.

	Question	Possible Quotients		
a)	$4.4 \div 5$	0.88	8.8	88
b)	$10.32 \div 6$	0.172	1.72	17.2
c)	$87.2 \div 4$	0.218	2.18	21.8

2. Divide. Estimate to place the decimal point.

a)  $8.235 \div 6$       b)  $12.6 \div 5$       c)  $39.77 \div 2$   
d)  $88.2 \div 5$       e)  $2.367 \div 4$       f)  $4.573 \div 5$

3. Divide. Write each quotient to the same number of decimal places as there are in the dividend.

a)  $3.05 \div 2$       b)  $\$49.67 \div 6$       c)  $6.1 \div 9$   
d)  $1.189 \div 3$       e)  $24.73 \div 9$       f)  $\$26.53 \div 6$

4. In a snail-racing contest, Noba's snail crawled 1.677 m in 5 min. About how far did the snail travel each minute?



5. Check each division below. For each incorrect quotient, explain the error, then write the correct quotient.

a)  $1.44 \div 6 = 0.24$

b)  $\$15.97 \div 5 = \$3.194$

c)  $4.422 \div 3 = 14.74$

d)  $17.27 \text{ L} \div 3 = 5.756 \text{ L}$

6. Richard divided a 1.954-L bottle of spicy tomato juice equally among 5 glasses. How much juice is in each glass?

7. Marina packed eight 2.54-L bottles of fruit juice for a 3-day camping trip to Beauvais Lake Provincial Park in Alberta. About how many litres of fruit juice does that allow for each day?



8. Three friends rent a movie for \$6.49 and buy a package of popcorn for \$1.82. They share the cost equally. How much should each person pay? Show your work.

