

Warm Up Grade 8



Multiply

Think 325×18

1) 3.25×1.8

$$\begin{array}{r}
 \begin{array}{r}
 \overset{2}{3} \overset{4}{2} \overset{5}{5} \\
 \times 1.8 \\
 \hline
 2600 \\
 + 3250 \\
 \hline
 5850
 \end{array}
 \end{array}$$

Arrows indicate the movement of the decimal point: 3.25 becomes 325 (2 places right) and 1.8 becomes 18 (1 place right). The final result 5850 has three red arrows pointing to the last three digits, indicating a total of 3 places to move the decimal point left to get 5.850.

2) 16.2×3.7

$$\begin{array}{r}
 \begin{array}{r}
 \overset{1}{16} \overset{2}{2} \\
 \times 3.7 \\
 \hline
 1134 \\
 + 4860 \\
 \hline
 5994
 \end{array}
 \end{array}$$

Arrows indicate the movement of the decimal point: 16.2 becomes 162 (2 places right) and 3.7 becomes 37 (1 place right). The final result 5994 has three red arrows pointing to the last three digits, indicating a total of 3 places to move the decimal point left to get 59.94.

Divide $16.43 \div 7$

$$\begin{array}{r}
 \overline{7 \over 16.430000} \\
 \underline{-14} \downarrow \\
 24 \downarrow \\
 \underline{-21} \downarrow \\
 33 \downarrow \\
 \underline{-28} \downarrow \\
 50 \downarrow \\
 \underline{-49} \downarrow \\
 10 \downarrow \\
 \underline{-7} \downarrow \\
 30 \downarrow \\
 \underline{-28} \downarrow \\
 20 \downarrow \\
 \underline{14} \downarrow \\
 6
 \end{array}$$

The quotient is 2.347142, with the decimal point placed after the first digit (2). The remainder 20 is shown at the bottom, with a blue arrow pointing to the next step.

Warm Up Grade 8



Multiply $\downarrow \downarrow$

1)

$$3.25 \times 1.8$$

$$\begin{array}{r} \text{3} \text{ } \text{2} \text{ } \text{5} \\ \times \text{1} \text{ } \text{.} \text{8} \\ \hline \text{2600} \\ + \text{3250} \\ \hline \text{5.850} \end{array}$$

2)

$$16.2 \times 3.7$$

$$\begin{array}{r} \text{16} \text{ } \text{.} \text{2} \\ \times \text{3} \text{ } \text{.} \text{7} \\ \hline \text{1134} \\ + \text{4860} \\ \hline \text{59.94} \end{array}$$

Divide $16.43 \div 7$

$$\begin{array}{r} \text{2} \text{ } \text{.} \text{3} \text{ } \text{4} \text{ } \text{7} \text{ } \text{1} \text{ } \text{4} \text{ } \text{2} \text{ } \text{8} \\ \overline{) 16.43000000} \\ \underline{-14} \downarrow \\ \text{24} \downarrow \\ \underline{-21} \downarrow \\ \text{33} \downarrow \\ \underline{-28} \downarrow \\ \text{50} \downarrow \\ \underline{-49} \downarrow \\ \text{10} \downarrow \\ \underline{-7} \downarrow \\ \text{30} \downarrow \\ \underline{-28} \downarrow \\ \text{20} \downarrow \\ \underline{-14} \downarrow \\ \text{60} \downarrow \\ \underline{-56} \\ \text{40} \end{array}$$

Finish the following



4. Divide. Multiply to check your answers.

a) $27.025 \div 5$

b) $3.42 \div 6$

c) $7.735 \div 7$

d) $16.072 \div 8$

e) $30.9 \div 5$

f) $3.438 \div 6$

4a)

$$\begin{array}{r} 5 \overline{) 27.025} \\ \underline{-25} \downarrow \\ 20 \downarrow \\ \underline{-20} \downarrow \\ 02 \downarrow \\ \underline{-0} \downarrow \\ 25 \downarrow \\ \underline{-25} \\ 0 \end{array}$$

b)

$$\begin{array}{r} 0.57 \\ 6 \overline{) 3.42} \\ \underline{-30} \downarrow \\ 42 \downarrow \\ \underline{-42} \\ 0 \end{array}$$

c)

$$\begin{array}{r} 1.105 \\ 7 \overline{) 7.735} \\ \underline{-7} \downarrow \\ 07 \downarrow \\ \underline{-7} \downarrow \\ 03 \downarrow \\ \underline{-0} \downarrow \\ 35 \downarrow \\ \underline{-35} \\ 0 \end{array}$$

d)

$$\begin{array}{r} 2.009 \\ 8 \overline{) 16.072} \\ \underline{-16} \downarrow \\ 00 \downarrow \\ \underline{-0} \downarrow \\ 07 \downarrow \\ \underline{-0} \downarrow \\ 72 \downarrow \\ \underline{-72} \\ 0 \end{array}$$

e)

$$\begin{array}{r} 6.18 \\ 5 \overline{) 30.90} \\ \underline{-30} \downarrow \\ 09 \downarrow \\ \underline{-5} \downarrow \\ 40 \downarrow \\ \underline{-40} \\ 0 \end{array}$$

f)

$$\begin{array}{r} 0.573 \\ 6 \overline{) 3.438} \\ \underline{-30} \downarrow \\ 43 \downarrow \\ \underline{-42} \downarrow \\ 18 \downarrow \\ \underline{-18} \\ 0 \end{array}$$



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

$$8 \div 6 = 1.$$

$$36 \div 3 = 12.$$

$$8 \div 8 = 1.$$

6. Aqpik 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, Aqpik skated 2.75 km in 5 min. About how far did Aqpik skate in 1 min?

$$\begin{array}{r} 5 \overline{) 2.75} \\ \underline{2 5} \\ 25 \\ \underline{- 25} \\ 0 \end{array}$$

Aqpik 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

$$\begin{array}{r} 0.45 \\ 5 \overline{) 2.25} \\ \underline{20} \downarrow \\ 25 \\ \underline{-25} \\ 0 \end{array}$$

Josie

$$\begin{array}{r} 0.34 \\ 8 \overline{) 2.72} \\ \underline{24} \downarrow \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

Eric travelled further in 1 min.

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.

$$\begin{array}{r} 12.50 \\ \times 5 \\ \hline 62.50 \end{array}$$

$$\begin{array}{r} 11.70 \\ 5 \overline{) 58.50} \\ \underline{-5} \\ 08 \\ \underline{-5} \\ 35 \\ \underline{35} \\ 00 \end{array}$$

Sharma paid \$11.70 each day
Miles paid \$12.50 each day.
So Sharma paid the lesser amount.

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.

~~X~~ a) $44.8 \div 8 = 0.56$ 5.6 b) $14.805 \div 5 = 2.961$ ✓
~~X~~ c) $3.15 \div 6 = 5.25$ 0.525 ~~X~~ d) $8.127 \div 1 = 0.8127$ 8.127

a) $40 \div 8 = 5$

b) $15 \div 5 = 3$

c) $3 \div 6$
 $\frac{3}{6} = \frac{1}{2} = 0.5$

d) $8 \div 1 = 8$



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?

$1 \div 4 = 0.25$
 Close to this
 Put decimal
 in wrong spot

c)

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

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?



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

She drove
2.708 km
in 1 day So

$$\begin{array}{r}
 ^3 ^4 \\
 2.708 \\
 \times ^5 \\
 \hline
 13.540
 \end{array}$$

Second
week She
would drive
13.54 km.

Part 2) If needed

1) $88.2 \div 7$

2) $12.65 \div 4$

3) $4.864 \div 8$

4) $14.596 \div 9$

5) $134.82 \div 6$

6) $7.043 \div 5$

7) $9.654 \div 3$

8) $18.62 \div 4$

9) $67.548 \div 6$

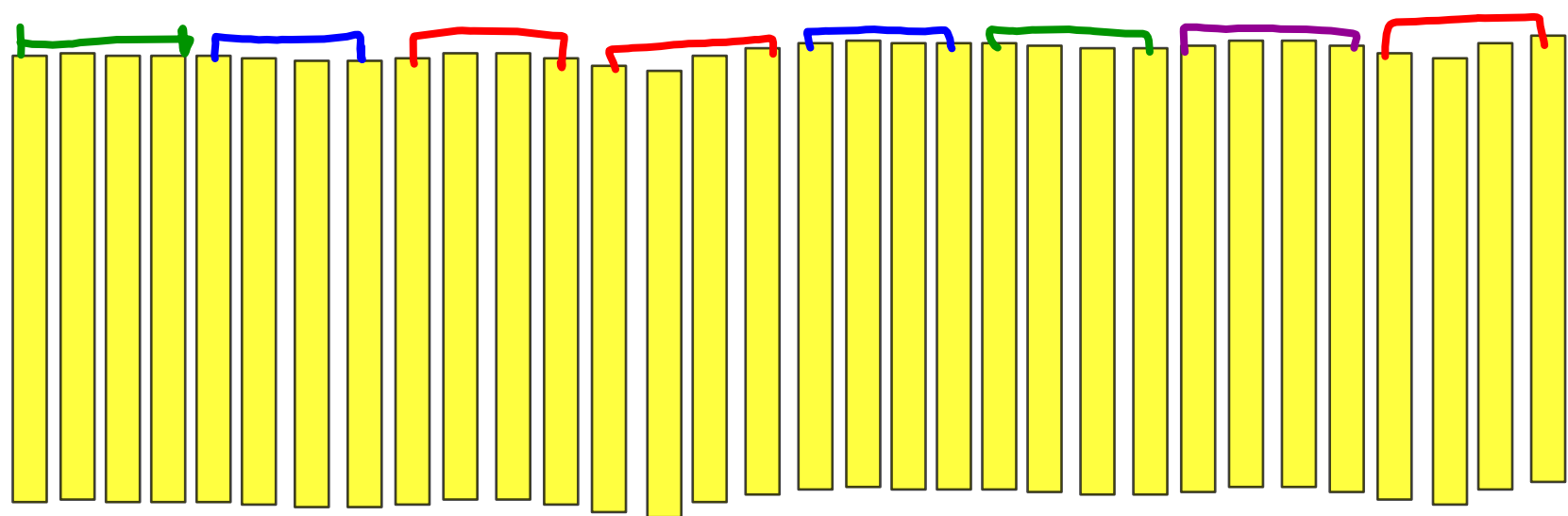
Dividing Decimals

Since multiplication and division is related, we can also use Base Ten Blocks to divide.

$3.2 \div 0.4$

we say 32 tenths ÷ 4 tenths = 8

break into groups containing 4 tenths.
(How many groups?)



Dividing Decimals

$$1.8 \times 0.4 = 0.72 \quad \text{THEN} \quad 1.8 = \frac{0.72}{0.4}$$

dividend

divisor

quotient

long division

$$\begin{array}{r} \text{Quotient} \\ \text{Divisor} \overline{) \text{Dividend}} \end{array}$$

long division but first make divisor a whole number

a) $0.4 \overline{) 0.72}$ $\longrightarrow$

Not
a
whole
#

$$\begin{array}{r} 1.8 \\ 4 \overline{) 7.2} \\ \underline{-4} \\ 32 \\ \underline{-32} \\ 0 \end{array}$$

$$0.72 \div 0.4 = 1.8$$

b) $0.8 \overline{) 0.72}$ $\longrightarrow$

Not
whole

$$\begin{array}{r} 0.9 \\ 8 \overline{) 7.2} \\ \underline{-0} \\ 72 \\ \underline{-72} \\ 0 \end{array}$$

✓ $\begin{array}{r} 0.9 \\ 8 \overline{) 7.2} \\ \underline{-72} \\ 0 \end{array}$

$$52.1 \div 0.9$$

estimate

$$52 \div 1 = 52$$

$$0.9 \overline{) 52.1}$$

→

is this whole

$$52.1 \div 0.9 = 57.\overline{8}$$

$$\begin{array}{r}
 57.\overline{8} \\
 9 \overline{) 521.00} \\
 \underline{-45} \\
 71 \\
 \underline{-63} \\
 80 \\
 \underline{-72} \\
 80
 \end{array}$$

Repeat

$$0.8 \overline{) 6.34} \longrightarrow$$

$$\begin{array}{r} 8 \overline{) 63.400} \\ \underline{-56} \\ 74 \\ \underline{-72} \\ 20 \\ \underline{-16} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

$$6.34 \div 0.8 = 7.925$$

$$0.7 \overline{) 436.1}$$



$$\begin{array}{r} 623. \\ 7 \overline{) 4361.} \\ \underline{-42} \\ 16 \\ \underline{-14} \\ 21 \\ \underline{-21} \\ 0 \end{array}$$

$$0.7 \overline{) 10.78} \rightarrow$$

67.95 ÷ 1.2 =



0

Class/ Homework

1 a) $0.8 \div 0.1$ b) $1.2 \div 0.3$ c) $2.7 \div 0.6$ d) $2.2 \div 0.4$

8

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

Question	Possible Quotients		
a) $59.5 \div 5$	119	11.9	1.19
b) $195.3 \div 0.2$	9765	976.5	97.65
c) $31.32 \div 0.8$	3915	391.5	39.15

5. Use paper and pencil to divide.

a) $1.5 \div 0.6$ b) $2.24 \div 0.7$ c) $1.28 \div 0.8$ d) $2.16 \div 0.9$

1a) $0.1 \overline{) 0.8} \rightarrow 1 \overline{) 8}$

$0.8 \div 0.1 = 8$

$$\begin{array}{r} 8 \\ 1 \overline{) 8} \\ \underline{-8} \\ 0 \end{array}$$