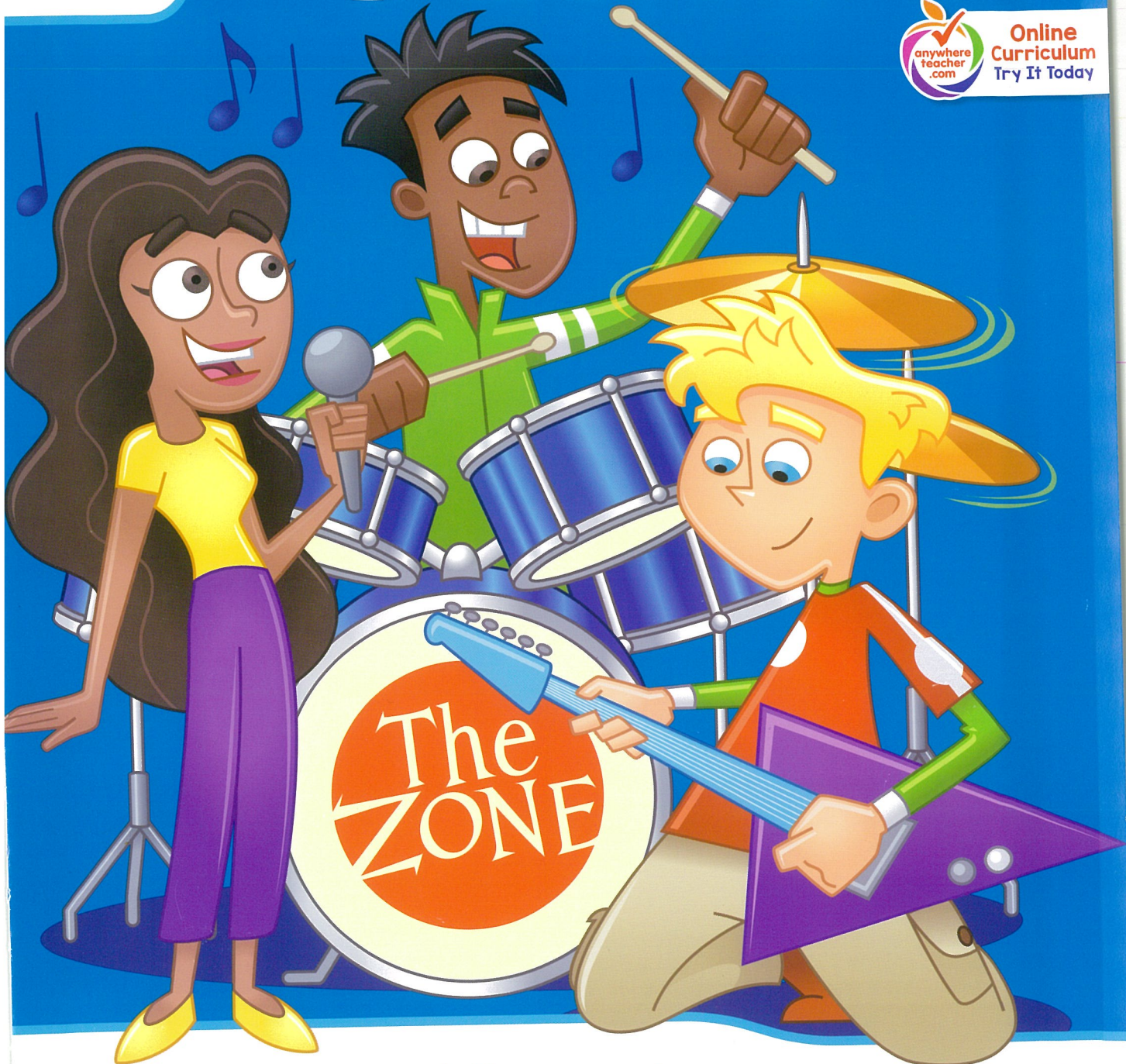


An I Know It!® Book

Math Basics

5

AGES 10-11



SKILL AREAS INCLUDE

- ★ Multiplication
- ★ Division

- ★ Measurement
- ★ Estimation
- ★ And More!

Follows **NCTM & COMMON CORE** Standards

Order of Operations

When performing calculations, remember to follow the order of operations:

1. Do calculations within parentheses.	2. Do multiplication or division , working from left to right.	3. Do addition or subtraction , working from left to right.
$5 \times (2 \times 3) + 10 =$	$5 \times 6 + 10 =$	$30 + 10 = 40$ $5 \times (2 \times 3) + 10 = 40$



Solve the equation.

1. $(4 + 8) \times 3 \div 9 =$ _____

2. $27 - (10 - 8) + 25 =$ _____

3. $12 \div 3 + (54 \div 9) =$ _____

4. $72 - (8 \times 5) \div 4 =$ _____

5. $(12 + 30) \div 7 \times 2 =$ _____

6. $9 \times 4 - (48 \div 6) =$ _____

7. $72 \div 9 \times (24 - 18) =$ _____

8. $(7 \times 5) + 5 \times 4 =$ _____

9. $30 + (12 \times 0) - 8 =$ _____

10. $64 \div (5 + 3) \times 4 =$ _____

11. $18 - 3 + (45 \div 9) =$ _____

12. $(6 + 3) \times 4 \div 12 =$ _____

Write Numerical Expressions

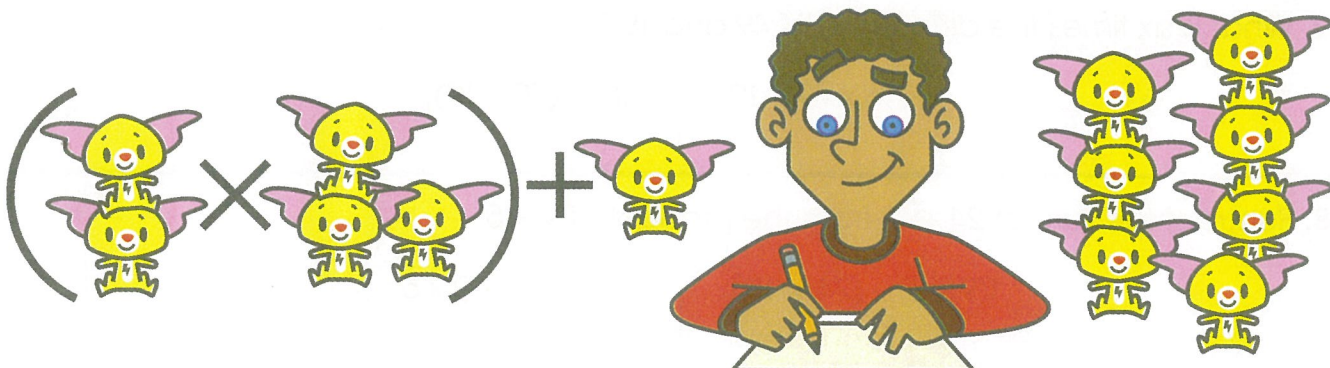
Remember the order of operations when you write numerical expressions.
Be sure to use grouping symbols.

What is three times the sum of 5 and 4? $3 \times (5 + 4)$



Write the numerical expression.

1. What is the product of $3 + 2$ and $36 \div 6$? _____
2. Divide 48 by 8, then multiply by 7. _____
3. Add 40 and 20, then divide by 15. _____
4. What is the sum of 3×6 and 2×9 ? _____
5. What is the difference between 6×8 and $24 \div 4$? _____
6. Add 30 to the product of 5×9 . _____
7. Find the difference between 49 and 37, then multiply by 6. _____
8. What is two times the sum of 25 and 17? _____



Number Patterns

Use a rule to generate a number pattern.
For example, start at 4 and add 3:

4 , 7 , 10 , 13 , 16 , 19 , 22 , 25

Use the rule to write the number pattern.

1. Start at 0 and add 10.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

2. Start at 3 and add 7.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

3. Start at 2 and multiply by 3.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

4. Start at 0 and add 4.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

5. Start at 1 and add 100.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

6. Start at 5 and add 8.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

7. Start at 50 and add 80.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

8. Start at 0 and add 12.

_____ , _____ , _____ , _____ , _____ , _____ , _____ , _____

Place Value of Whole Numbers

Which is greater: 28,748 or 28,527?

Line up the digits by place value.	Look at the digits from left to right. Find the first place where the digits are different.	Compare the values of the digits. The numbers compare the same way.
28,748	28,748	7 hundreds > 5 hundreds
28,527	28,527 ↑ different	28,748 > 28,527 28,748 is greater than 28,527

You could also write 28,527 is less than 28,748 or $28,527 < 28,748$.

To compare more than two numbers, use the same steps.

28,746 28,746 is the greatest number. It has the most hundreds. 28,746
 28,562 Then compare the the other two numbers. 28,562
 28,526 28,562 is greater than 28,526. It has more tens. → 28,526

Compare the numbers. Write < or >.

1. 285 ● 322

2. 9,728 ● 9,278

3. 45,883 ● 45,308

4. 51,070 ● 50,712

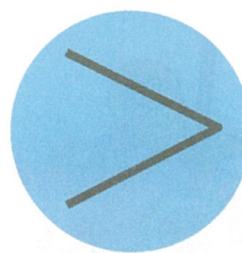
5. 561,040 ● 560,244

6. 3,400,899 ● 3,408,099

Write the numbers in order from least to greatest.

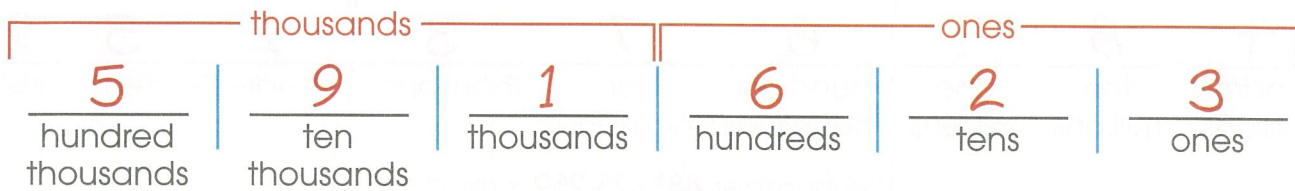
7. 85,662 84,652 85,462

8. 198,598 189,908 189,998 198,958



Place Value Through Hundred Thousands

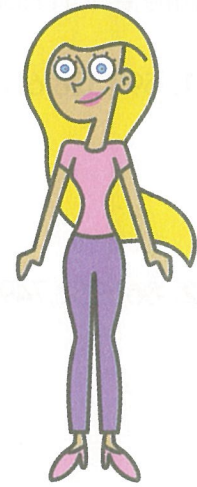
Each digit in a multi-digit number is ten times more than the digit to its right.
The number 591,623 represents:



In expanded form, the number is:
500,000 + 90,000 + 1,000 + 600 + 20 + 3

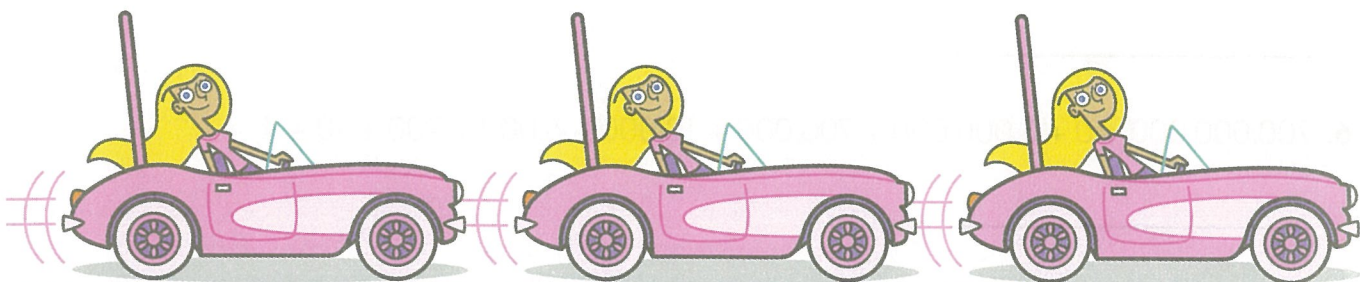
Write each number in standard form.

- 80,000 + 3,000 + 700 + 40 + 9 _____
- 300,000 + 10,000 + 2,000 + 900 + 50 + 6 _____
- 700,000 + 80,000 + 1,000 + 0 + 20 + 5 _____
- 40,000 + 2,000 + 900 + 70 + 1 _____



Write each number in expanded form.

- 634,598 _____ + _____ + _____ + _____ + _____ + _____
- 180,926 _____ + _____ + _____ + _____ + _____ + _____
- 94,253 _____ + _____ + _____ + _____ + _____
- 277,869 _____ + _____ + _____ + _____ + _____ + _____



Multiply with Multiples of Ten

Look for patterns when you multiply by 10 or multiples of 10.

Example 1:	Example 2:	Example 3:
$3 \times 10 = 30$ $3 \times 100 = 300$ $3 \times 1,000 = 3,000$	$6 \times 40 =$ $6 \times (4 \times 10) =$ $(6 \times 4) \times 10 =$ $24 \times 10 = 240$	$2 \times 6 \times 5 =$ $(2 \times 5) \times 6 = 10 \times 6 = 60$ $2 \times (6 \times 5) = 2 \times 30 = 60$
Each product has the same number of zeros as the multiple of 10.	Look for basic facts.	Find factors that are multiples of 10.

Find the product.

1. $4 \times 100 =$ _____

2. $9 \times 60 =$ _____

3. $1,000 \times 7 =$ _____

4. $10 \times 20 =$ _____

5. $8 \times 5 \times 7 =$ _____

6. $3,000 \times 9 =$ _____

7. $2,000 \times 50 =$ _____

8. $6 \times 600 =$ _____

9. $12 \times 5 \times 7 =$ _____

10. $900 \times 8 =$ _____

11. $5,000 \times 4 =$ _____

12. $10 \times 80 =$ _____

13. $6 \times 8 \times 5 =$ _____

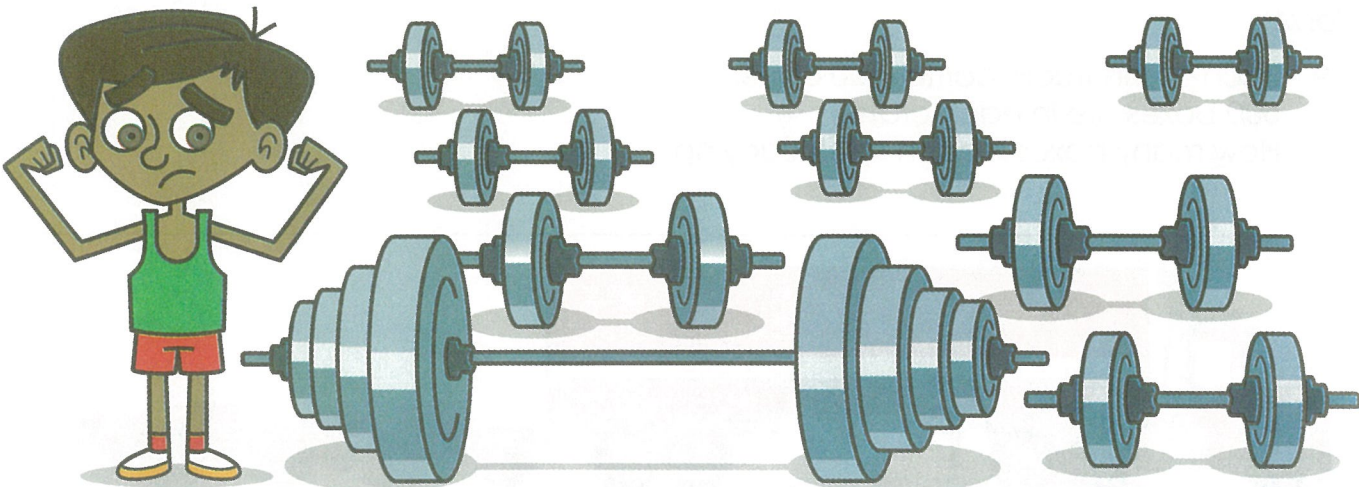
14. $15 \times 2 \times 4 =$ _____

15. $4 \times 4,000 =$ _____

16. $700 \times 8 =$ _____

17. $50 \times 300 =$ _____

18. $600 \times 300 =$ _____



Multiplication Properties and Multiples of Ten

Use the **properties of multiplication** to help you multiply by 10 or multiples of 10.

Find multiples of 10. Use the **commutative** and **associative properties** to change the order of the factors.

$$\begin{aligned}4 \times 7 \times 5 &= \\7 \times (4 \times 5) &= \\7 \times 20 &= 140\end{aligned}$$

Use the **distributive property** to break apart a factor.

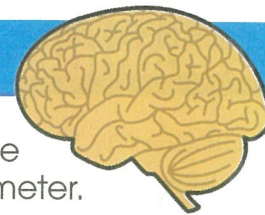
$$\begin{aligned}4 \times 18 &= \\4 \times (10 + 8) &= \\(4 \times 10) + (4 \times 8) &= \\40 + 32 &= 72\end{aligned}$$

Find the product.

- $6 \times 9 \times 5 =$ _____
- $3 \times 24 =$ _____
- $8 \times 35 =$ _____
- $4 \times 70 \times 5 =$ _____
- $300 \times 13 =$ _____
- $15 \times 21 =$ _____
- $9 \times 54 =$ _____
- $40 \times 23 =$ _____
- $8 \times 6 \times 5 =$ _____
- $17 \times 6 =$ _____
- $700 \times 72 =$ _____
- $2 \times 9 \times 5 =$ _____



More Decimal Place Value



It's a FACT!

The smallest cell in the human body is a brain cell in the cerebellum. It measures about 0.005 millimeters in diameter.

standard form: 0.005
 short word form: 5 thousandths
 meaning: $\frac{5}{1000}$

Use place value to read a decimal or to determine the value of a digit in a decimal numeral. In the decimal system, each place has 10 times the value of the place on its right.

Hundreds 100	Tens 10	Ones 1		Tenths $\frac{1}{10}$	Hundredths $\frac{1}{100}$	Thousandths $\frac{1}{1000}$	Read as:
5	2	1	.	8			521 and 8 tenths
	6	2	.	3	7		62 and 37 hundredths
		0	.	0	0	5	5 thousandths

The **decimal point** separates the whole number part of the decimal number from the fractional part of the decimal number. Notice that the places to the right of the decimal point end with *ths*. You say *tens* on the left side of the decimal point, but *tenths* on the right side.

To read a decimal:

Say the whole number first if there is one.
 Say "and" for the decimal point.
 Say the rest of the number as a whole number.
 Say the place of the last digit.

For 62.37, say: "sixty-two and thirty-seven hundredths."
 In 62.37, the digit 3 is in the tenths place.
 Its value is three tenths or 0.3 or $3 \times \frac{1}{10}$.

Write each number in standard form.

- 36 hundredths _____
- ten and six tenths _____
- 3 and 5 hundredths _____
- twenty-seven thousandths _____

Write the digit for each place in **1,246.305**.

- tens _____
- tenths _____
- thousandths _____
- hundredths _____

Name the place value of the digit **3** in each number.

- 45.3 _____
- 0.13 _____
- 3,004 _____

Compare and Order Decimals

Compare decimals using the symbols $<$ (less than), $>$ (greater than), or $=$ (equal to).

Line up the decimal points.	Look at the digits from left to right. Find the first place where the digits are different.	Compare the values of the digits. The numbers compare the same way. Use symbols to show the comparison.
65.29 65.92	65.29 65.92 ↑ different	$\frac{2}{10}$ is less than $\frac{9}{10}$. 65.29 is less than 65.92 . $65.29 < 65.92$

Compare the numbers. Write $<$, $>$ or $=$.

1. 4.53 \bullet 4.28

2. 93.15 \bullet 9.315

3. 7.49 \bullet 7.94

4. 5.6 \bullet 5.60

5. 8.073 \bullet 8.703

6. 2.841 \bullet 2.814

7. 35.12 \bullet 35.012

8. 6.908 \bullet 69.08

9. 80.50 \bullet 80.5



Write the numbers in order from least to greatest.

10. 2.0 20 0.02 0.20

11. 3.75 37.50 35.70 3.57

12. 48.601 40.861 48.610 46.018



Add Decimals

To add decimals, line up the decimal points.

Remember that a decimal point can come at the end of a whole number.

$$7 = 7.0 = 7.00$$

Add:	Line up the decimal points.	Add the numbers. Be sure to put the decimal point in your answers.
80.24, 7.13, and 2	$\begin{array}{r} 80.24 \\ 7.13 \\ + 2.00 \\ \hline \end{array}$	$\begin{array}{r} 80.24 \\ 7.13 \\ + 2.00 \\ \hline 89.37 \end{array}$

Find the sum.

$$\begin{array}{r} 1. \quad 39.106 \\ + \quad 7.420 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 5.93 \\ + \quad 21.87 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 164.095 \\ + 207.134 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 96.271 \\ + 14.305 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 108.53 \\ + \quad 74.49 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 57.000 \\ + 11.098 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 9.352 \\ + 62.081 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 481.592 \\ + 370.516 \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 14.832 \\ + 36.709 \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 263.09 \\ + \quad 85.74 \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 12.907 \\ + 584.036 \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 97.258 \\ + \quad 4.177 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 932.84 \\ + 675.01 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 742.89 \\ + \quad 63.51 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 49.072 \\ + 153.868 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 670.95 \\ + 482.39 \\ \hline \end{array}$$

Round Whole Numbers and Decimals

Round 573.629 to the nearest hundredth.

Find the digit in the place to round to.	Look at the digit to its right. Underline it.	If the underlined digit is less than 5, round down. If the digit is 5 or greater, round up.
573.629	573.62 <u>9</u>	573.62 <u>9</u> $9 > 5$, so round up. 573.629 rounds to 573.63 , the nearest hundredth.

Round 48.329 to the nearest whole number: 48.329 rounds to **48**.

Round 16.594 to the nearest tenth: 16.594 rounds to **16.6**.

Round each number to the nearest hundredth.

1. 72.209 _____

2. 8.6531 _____

3. 431.738 _____

4. 16.0725 _____

Round each number to the nearest whole number.

5. 581.704 _____

6. 18.396 _____

7. 101.562 _____

8. 32.489 _____

Round each number to the nearest tenth.

9. 212.745 _____

10. 96.862 _____

11. 4.259 _____

12. 803.922 _____



Multiply Whole Numbers

Find the product of 26 and 628.

Multiply by the ones.	Multiply by the tens.	Add the partial products.
$\begin{array}{r} 14 \\ 628 \\ \times 26 \\ \hline 3768 \end{array}$	$\begin{array}{r} 1 \\ 628 \\ \times 26 \\ \hline 3768 \\ 12560 \end{array}$	$\begin{array}{r} 628 \leftarrow \text{factor} \\ \times 26 \leftarrow \text{factor} \\ \hline 3768 \\ + 12560 \\ \hline 16328 \leftarrow \text{product} \end{array}$ <p>The product is 16,328.</p>

You can estimate to see if your answer makes sense.
 26×628
 $30 \times 600 = 18,000$

Be sure to line up the partial products correctly.
 Remember these properties of multiplication.

Identity Property	Zero Property	Commutative Property
The product of a number and one is that number. $7 \times 1 = 7$ $1 \times 7 = 7$	The product of a number and zero is zero. $6 \times 0 = 0$ $0 \times 6 = 0$	Changing the order of the factors does not change the product. $6 \times 9 = 54$ $9 \times 6 = 54$



Estimate the product, then multiply.

1.
$$\begin{array}{r} 125 \\ \times 43 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 392 \\ \times 34 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 229 \\ \times 48 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 240 \\ \times 69 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 509 \\ \times 51 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 532 \\ \times 47 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 107 \\ \times 34 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 600 \\ \times 17 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 3,194 \\ \times 23 \\ \hline \end{array}$$

10.
$$\begin{array}{r} 849 \\ \times 52 \\ \hline \end{array}$$



Arrange the digits 1, 2, 6, and 8 to make each number sentence true.
 Use each digit only once.

_____ x _____ = 1,428

_____ x _____ = 1,236

Division Patterns

Use basic facts to find quotients of multiples of 10, 100, and 1,000.

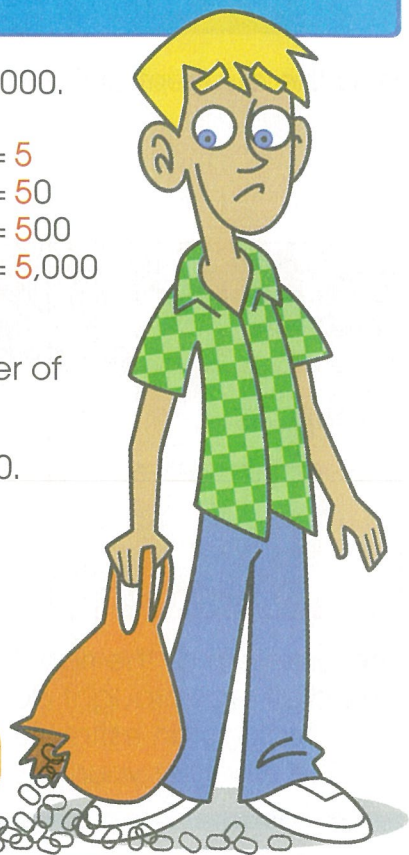
$6 \div 2 = 3$	$32 \div 8 = 4$	$20 \div 40 = 5$
$60 \div 2 = 30$	$320 \div 80 = 4$	$200 \div 40 = 50$
$600 \div 2 = 300$	$3,200 \div 800 = 4$	$2,000 \div 40 = 500$
$6,000 \div 2 = 3,000$	$32,000 \div 8,000 = 4$	$20,000 \div 40 = 5,000$

A basic fact is used over and over again in each pattern. Compare the number of zeros in the quotient with the number of zeros in the dividend and divisor.

Here is a shortcut for dividing with multiples of 10, 100, or 1,000.

Divide the front digits. Write the quotient.	Affix the number of zeros that are left by dividing the multiples.
What is $36,000 \div 90$?	$36,000 \div 90$
$36,000 \div 90$ 4	400
	Think: $1,000 \div 10 = 100$
	The quotient is 400.

$$\begin{array}{r} 400 \\ 90 \overline{)36,000} \end{array}$$



Use the shortcut to find each quotient. Think of basic facts.

- | | |
|------------------------------|-----------------------------|
| 1. $280 \div 7 =$ _____ | 2. $4,500 \div 50 =$ _____ |
| 3. $400 \div 50 =$ _____ | 4. $8,000 \div 800 =$ _____ |
| 5. $42,000 \div 700 =$ _____ | 6. $30,000 \div 60 =$ _____ |

Write the missing number.

- | | |
|-------------------------------|--------------------------------|
| 7. $250 \div$ _____ $= 50$ | 8. _____ $\times 3 = 120$ |
| 9. _____ $\div 9 = 600$ | 10. _____ $\times 70 = 49,000$ |
| 11. $5,600 \div$ _____ $= 80$ | 12. _____ $\times 5 = 25,000$ |



Add and Subtract Decimals

When you add and subtract decimals, remember to place the decimal point in the answer.

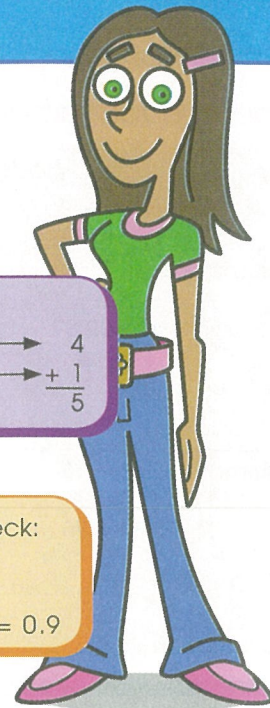
Line up the decimal points. Write equivalent decimals if needed.	Add or subtract.	Write the decimal point in the answer.
Add: $3.8 + 1.357$ $\begin{array}{r} 3.8 & = & 3.800 \\ + 1.357 & & + 1.357 \\ \hline \end{array}$	$\begin{array}{r} 1 \\ 3.800 \\ + 1.357 \\ \hline 5.157 \end{array}$	$\begin{array}{r} 1 \\ 3.800 \\ + 1.357 \\ \hline 5.157 \end{array}$
Subtract: $0.9 - 0.37$ $\begin{array}{r} 0.9 & & 0.90 \\ - 0.37 & & - 0.37 \\ \hline \end{array}$	$\begin{array}{r} 8 \ 10 \\ 0.90 \\ - 0.37 \\ \hline 0.53 \end{array}$	$\begin{array}{r} 8 \ 10 \\ 0.90 \\ - 0.37 \\ \hline 0.53 \end{array}$

Estimate:

$$\begin{array}{r} 3.8 \rightarrow 4 \\ + 1.357 \rightarrow + 1 \\ \hline 5 \end{array}$$

Add to check:

$$\begin{array}{r} 1 \\ 0.53 \\ + 0.37 \\ \hline 0.90 = 0.9 \end{array}$$



Find the sum or difference. Estimate or add to check your answer.

1.
$$\begin{array}{r} 4.8 \\ + 1.6 \\ \hline \end{array}$$

2.
$$\begin{array}{r} 5.52 \\ + 9.1 \\ \hline \end{array}$$

3.
$$\begin{array}{r} 0.61 \\ + 0.9 \\ \hline \end{array}$$

4.
$$\begin{array}{r} 5.26 \\ - 0.379 \\ \hline \end{array}$$

5.
$$\begin{array}{r} 6.021 \\ - 0.379 \\ \hline \end{array}$$

6. $8.65 - 4.079 = \underline{\hspace{2cm}}$

7. $5.02 + 0.46 = \underline{\hspace{2cm}}$

8. $0.723 - 0.36 = \underline{\hspace{2cm}}$

9. $1.563 + 7.14 = \underline{\hspace{2cm}}$

Solve.

10. Carol bought a pair of jeans for \$12.95 and a belt for \$3.79. The sales tax is \$1.01. Carol gave the store clerk a \$20.00 bill. How much change should she get back?

Multiply and Divide by Powers of 10

Here are some shortcuts to help you multiply by powers of 10. Notice that the decimal point changes position.

To multiply by 10: Move the decimal point 1 place to the right in the other factor.	$10 \times 2.85 = 2.85 = 28.5$	$10 \times 0.053 = 0.053 = 0.53$
To multiply by 100: Move the decimal point 2 places to the right in the other factor.	$100 \times 2.85 = 2.85 = 285$	$100 \times 0.053 = 0.053 = 5.3$
To multiply by 1,000: Move the decimal point 3 places to the right in the other factor.	$1,000 \times 2.85 = 2.850 = 2,850$	$1,000 \times 0.053 = 0.053 = 53$

Here are some shortcuts to help you divide by powers of 10.

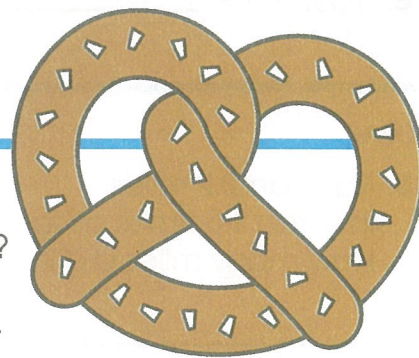
To divide by 10: Move the decimal point 1 place to the left in the dividend.	$1,824 \div 10 = 1,824 = 182.4$	$35.5 \div 10 = 35.5 = 3.55$
To divide by 100: Move the decimal point 2 places to the left in the dividend.	$1,824 \div 100 = 1,824 = 18.24$	$35.5 \div 100 = 35.5 = 0.355$
To divide by 1,000: Move the decimal point 3 places to the left in the dividend.	$1,824 \div 1,000 = 1,824 = 1.824$	$35.5 \div 1000 = 035.5 = 0.0355$

Find the product or quotient. Use the shortcuts shown above.

- $422 \times 10 =$ _____
- $3.2 \times 100 =$ _____
- $26 \div 10 =$ _____
- $512 \div 100 =$ _____
- $10 \times 0.06 =$ _____
- $0.07 \times 1,000 =$ _____
- $22.5 \div 100 =$ _____
- $45 \div 1,000 =$ _____
- $1,000 \times 2.034 =$ _____

Solve.

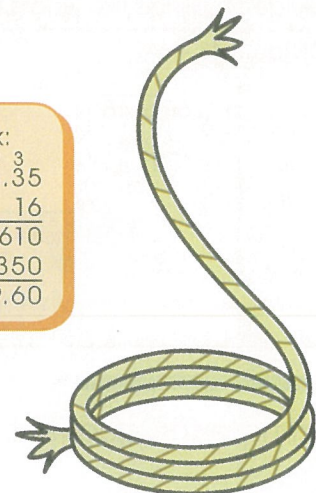
10. Pretzels are 10 for \$2. How much does one pretzel cost?
- _____



Divide Decimals by Whole Numbers

When you divide decimals by whole numbers, you must keep track of the decimal point in the quotient.

<p>When dividing by a whole number, write the decimal point in the quotient directly above the decimal point in the dividend.</p>	<p>Divide like whole numbers. If there is a remainder, write more zeros in the dividend and continue to divide.</p>	<p>Check: $\begin{array}{r} 23 \\ 4.35 \\ \times 16 \\ \hline 2610 \\ + 4350 \\ \hline 69.60 \end{array}$</p>
<p>Divide 69.6 by 16</p> $16 \overline{)69.6}$ <div style="border: 1px solid orange; padding: 5px; margin-top: 10px;"> <p>Estimate: $69.6 \div 16$</p> <p style="text-align: center;">$64 \div 16 = 4$</p> <p>Sometimes you can recognize a basic fact.</p> </div>	<p>Divide 69.6 by 16</p> $\begin{array}{r} 4.35 \\ 16 \overline{)69.60} \\ - 64 \\ \hline 56 \\ - 48 \\ \hline 80 \\ - 80 \\ \hline 0 \end{array}$ <p>The quotient is 4.35.</p>	



Estimate the quotient, then divide. Check your answer.

1. $4 \overline{)20.48}$

2. $3 \overline{)\$8.52}$

3. $5 \overline{)20.75}$

4. $12 \overline{)15.84}$

5. $15 \overline{)31.5}$

6. $34 \overline{)244.8}$

7. $21 \overline{)12.6}$

8. $36 \overline{)\$10.08}$

9. $9 \overline{)307.8}$

10. $11 \overline{)29.59}$

Solve.

11. Dave has a rope that is 21.5 feet long. If he cuts it into five equal pieces, how long will each piece be?

Mixed Numbers and Improper Fractions

A **mixed number** is a number greater than 1. It is made up of a whole number and a fraction.

$$1\frac{1}{5} \quad 3\frac{5}{8} \quad 2\frac{2}{3}$$

An **improper fraction** is a fraction equal to or greater than 1. The numerator is equal to or greater than its denominator.

$$\frac{5}{5} \quad \frac{5}{3} \quad \frac{6}{4}$$

To write a mixed number as an improper fraction:

Multiply the whole number by the denominator. Add the numerator to the product. Write the sum over the denominator.

Write $2\frac{1}{3}$ as an improper fraction:

$$2 \begin{array}{l} \leftarrow + \\ \leftarrow \times \end{array} \frac{1}{3} \quad 2 \times 3 + 1 = 7 \quad 2\frac{1}{3} = \frac{7}{3}$$

To write an improper fraction as a mixed number:

Divide the numerator by the denominator. Write the quotient as the whole number. Write the remainder as the numerator over the denominator.

Write $\frac{7}{3}$ as a mixed number:

$$\begin{array}{r} 2 \\ 3 \overline{)7} \\ \underline{-6} \\ 1 \end{array} \quad \begin{array}{l} \leftarrow \text{quotient} \\ 2\frac{1}{3} \\ \leftarrow \text{remainder} \\ \leftarrow \text{divisor} \end{array}$$

Write as an improper fraction.

1. $2\frac{1}{3} =$ _____

2. $1\frac{5}{8} =$ _____

3. $3\frac{2}{5} =$ _____

4. $5\frac{1}{6} =$ _____

5. $3\frac{3}{5} =$ _____

Write as a mixed number in simplest form.

6. $\frac{21}{8} =$ _____

7. $\frac{15}{6} =$ _____

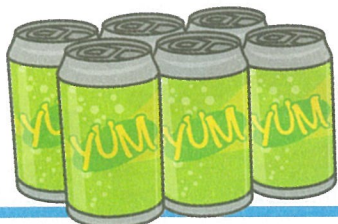
8. $\frac{12}{4} =$ _____

9. $\frac{11}{9} =$ _____

10. $\frac{45}{12} =$ _____

Solve.

11. A new soft drink called YUM is sold in six-packs. At Saul's party, the children drank 28 cans of YUM. Write a mixed number to express how many six-packs they drank.



Write $\frac{1200}{480}$ as a mixed number.

Subtract Fractions with Unlike Denominators

These fractions have unlike denominators.

Find the least common denominator (LCD) for the fractions to make it easier to simplify the answer.

Rewrite the fractions as equivalent fractions with common denominators.	Subtract the numerators. Use the common denominator.	Write the difference in simplest form.
Subtract: $\frac{5}{8} - \frac{7}{24}$ $\frac{5}{8} = \frac{15}{24}$ $\frac{7}{24} = \frac{7}{24}$	$\frac{5}{8} = \frac{15}{24}$ $\frac{7}{24} = \frac{7}{24}$ $\frac{8}{24}$	$\frac{8}{24} = \frac{1}{3}$ The difference is $\frac{1}{3}$.

Find the difference. Write the answer in simplest form.

1. $\frac{5}{6} - \frac{2}{3}$

2. $\frac{5}{8} - \frac{1}{4}$

3. $\frac{3}{8} - \frac{1}{3}$

4. $\frac{4}{5} - \frac{3}{10}$

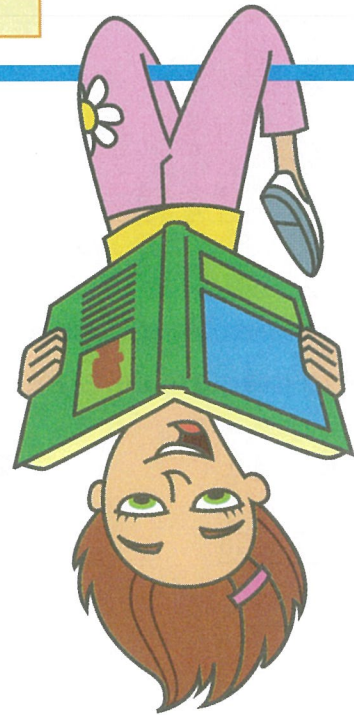
5. $\frac{7}{8} - \frac{5}{6}$

6. $\frac{9}{10} - \frac{2}{5}$

7. $\frac{11}{12} - \frac{2}{3} =$ _____

8. $\frac{7}{10} - \frac{3}{8} =$ _____

9. $\frac{2}{3} - \frac{2}{5} =$ _____



Solve.

10. Bonita read her book for $\frac{3}{4}$ of an hour. Bob read his book for $\frac{2}{3}$ of an hour. Who spent more time reading? How many minutes longer?

Subtract Mixed Numbers

To subtract mixed numbers:

Rewrite the fractional parts as equivalent fractions with common denominators.	Subtract the fractions. Regroup if needed. Subtract the whole numbers.	Write the difference in simplest form.
Subtract: $4\frac{7}{12} - 2\frac{1}{4}$ $4\frac{7}{12} = 4\frac{7}{12}$ $- 2\frac{1}{4} = 2\frac{3}{12}$	$4\frac{7}{12} = 4\frac{7}{12}$ $- 2\frac{1}{4} = 2\frac{3}{12}$ $2\frac{4}{12}$	$2\frac{4}{12} = 2\frac{1}{3}$ The difference is $2\frac{1}{3}$.
Subtract: $3\frac{1}{2} - 1\frac{5}{8}$ $3\frac{1}{2} = 3\frac{4}{8}$ $- 1\frac{5}{8} = 1\frac{5}{8}$	$3\frac{1}{2} = 3\frac{4}{8} = 2\frac{12}{8}$ $- 1\frac{5}{8} = 1\frac{5}{8} = 1\frac{5}{8}$ $1\frac{7}{8}$	Regroup: $3\frac{4}{8} = 2 + 1\frac{4}{8} = 2\frac{12}{8}$ The difference is $1\frac{7}{8}$.

You can add to check your answers.

Check:

$$2\frac{1}{3} = 2\frac{4}{12}$$

$$+ 2\frac{1}{4} = 2\frac{3}{12}$$

$$\hline 4\frac{7}{12}$$

Find the difference. Write the answer in simplest form.

1. $4\frac{2}{3}$
 $- 1\frac{1}{6}$

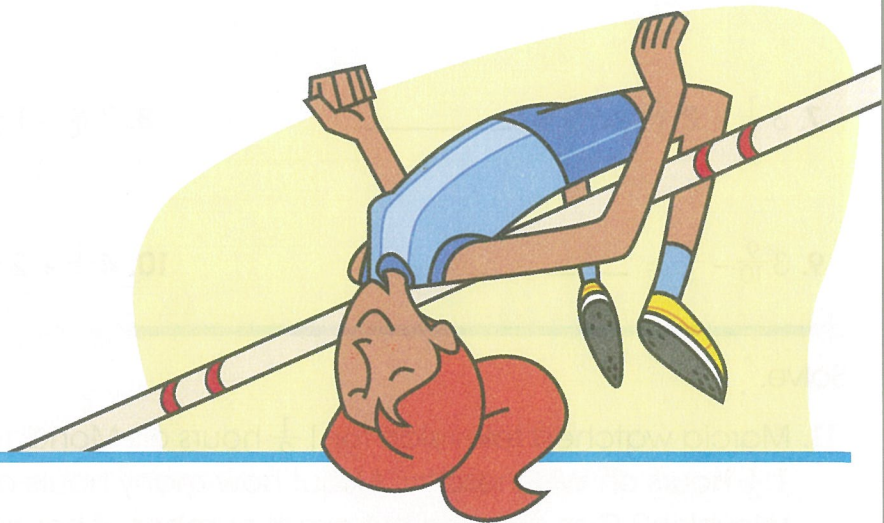
2. $5\frac{4}{5}$
 $- 2\frac{1}{10}$

3. $8\frac{1}{8}$
 $- 3\frac{5}{6}$

4. $6\frac{1}{4} - 3\frac{3}{4} = \underline{\hspace{2cm}}$

5. $7\frac{1}{3} - 2\frac{3}{5} = \underline{\hspace{2cm}}$

6. $5 - 2\frac{1}{4} = \underline{\hspace{2cm}}$



Solve.

7. The school high-jump record was $6\frac{2}{3}$ feet. Natasha jumped $7\frac{1}{4}$ feet. By how many feet did she break the record?

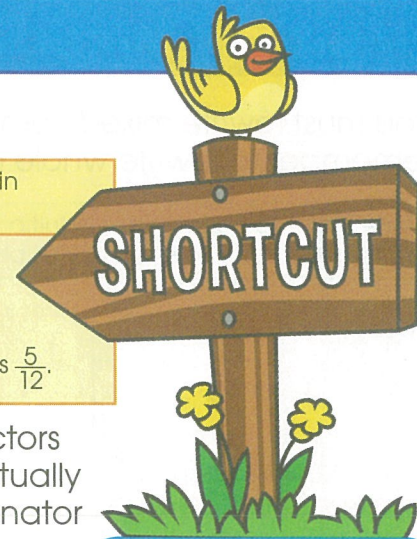
Multiply Fractions

To multiply fractions:

Multiply the numerators.	Multiply the denominators.	Write the product in simplest form.
Multiply: $\frac{2}{3} \times \frac{5}{8}$ $\frac{2}{3} \times \frac{5}{8} = \frac{10}{24}$	$\frac{2}{3} \times \frac{5}{8} = \frac{10}{24}$	$\frac{10}{24} = \frac{5}{12}$ The product is $\frac{5}{12}$.

You can use a shortcut called **canceling** to simplify the factors before multiplying. The shortcut works because you are actually finding the common factors of the numerator and denominator and they cancel each other out.

Recognize common factors in the numerator and denominator.	Multiply the numerators. Multiply the denominators.	Write the product in simplest form.
Multiply: $\frac{2}{3} \times \frac{5}{8}$ $\frac{2}{3} \times \frac{5}{8} =$ 2 is a factor of 2 and 8. $2 \div 2 = 1$ $8 \div 2 = 4$	$\frac{2}{3} \times \frac{5}{8} = \frac{5}{12}$	The product is $\frac{5}{12}$.



If one of the factors is a whole number, rewrite the whole number as an improper fraction with a denominator of 1.

$$\frac{2}{3} \times 8 = \frac{2}{3} \times \frac{8}{1} = \frac{16}{3} = 5\frac{1}{3}$$

$8 = \frac{8}{1}$

Find the product. Write the answer in simplest form.

1. $\frac{1}{2} \times \frac{1}{6} =$ _____

2. $\frac{1}{4} \times \frac{8}{9} =$ _____

3. $\frac{5}{8} \times \frac{3}{5} =$ _____

4. $\frac{2}{3} \times \frac{3}{4} =$ _____

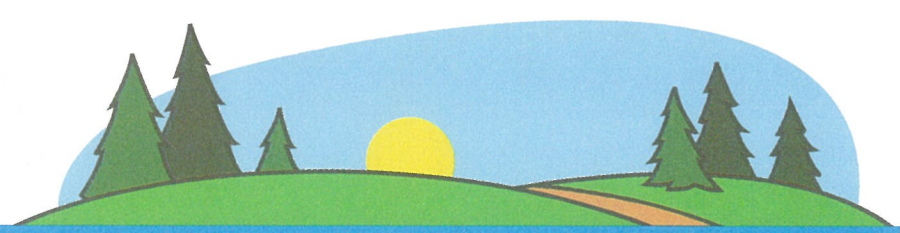
5. $6 \times \frac{3}{4} =$ _____

6. $\frac{3}{5} \times 4 =$ _____

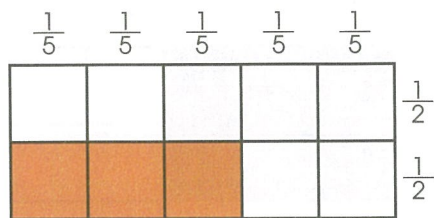
7. $\frac{3}{8} \times \frac{4}{5} =$ _____

8. $\frac{2}{5} \times 4 \times \frac{5}{8} =$ _____

9. $\frac{3}{4} \times \frac{1}{2} \times \frac{2}{3} =$ _____



Multiply Fractions to Find Areas

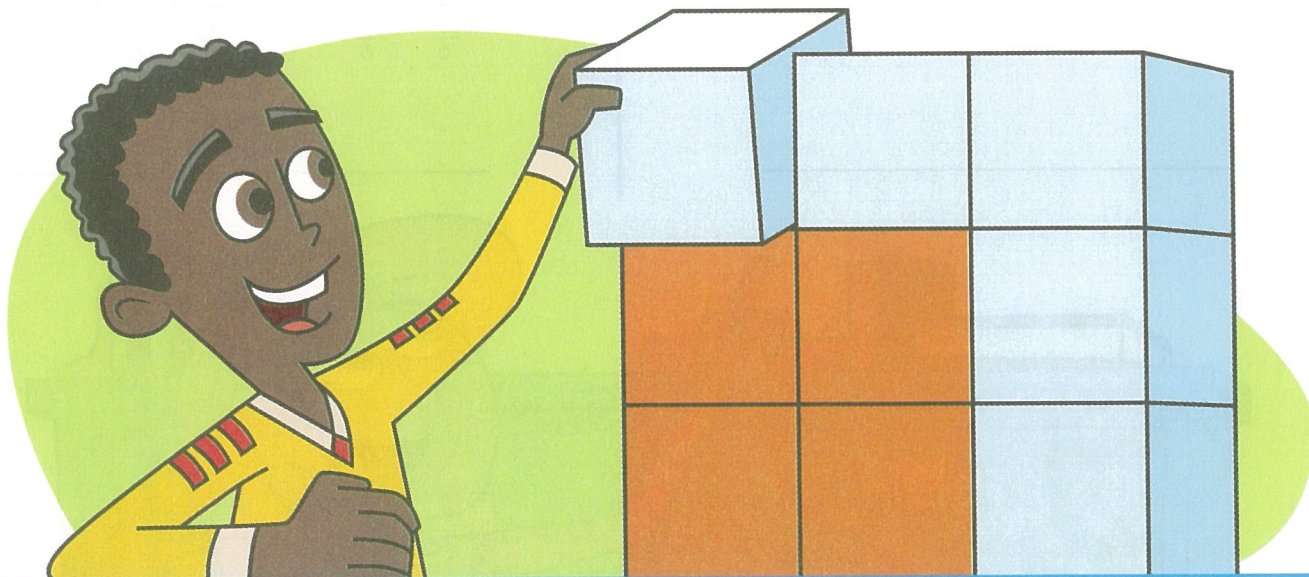
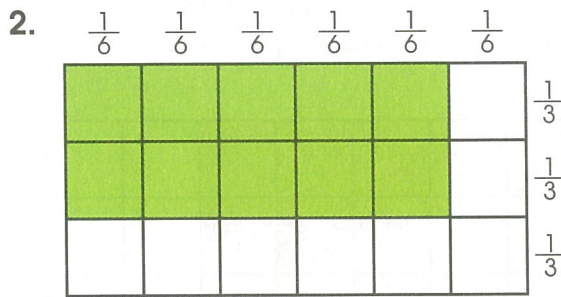
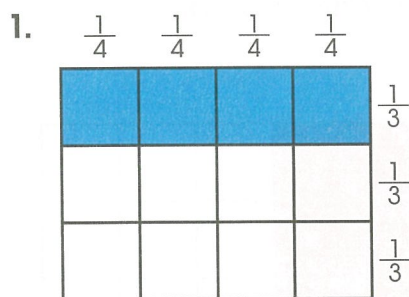


This rectangle is divided into fifths and halves. Multiply to find the shaded area. Across, $\frac{3}{5}$ of the units are shaded. Down the side, $\frac{1}{2}$ of the units are shaded.

Multiply the fractions to find out how much of the rectangle is shaded: $\frac{3}{5} \times \frac{1}{2} = \frac{3}{10}$

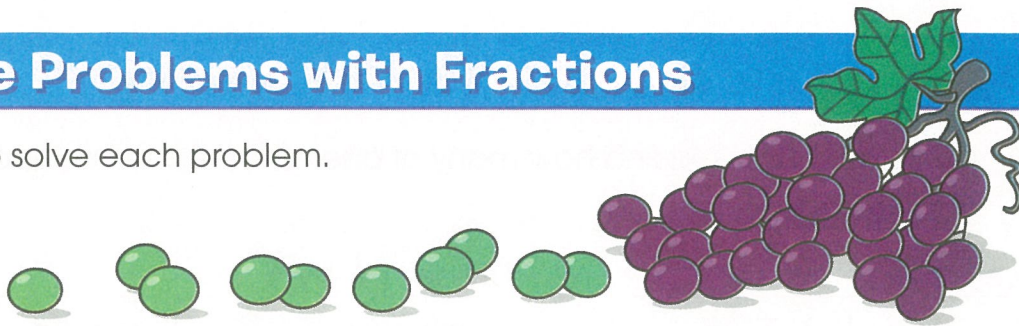
Check your answer. Count the number of units that are shaded. Three of the ten units are shaded.

Multiply fractions to find the shaded area of each rectangle. Write the equation. Find the answer and simplify the fraction.



Solve Problems with Fractions

Multiply to solve each problem.



1. Ms. Li is weaving a rug that is $3\frac{1}{2}$ feet by $4\frac{2}{3}$ feet.
What is the area of her rug?

2. Josh bought 33 grapes and $\frac{2}{3}$ of them were red.
How many red grapes did Josh buy?

3. Ashley ran $2\frac{7}{8}$ miles on Monday and by the end of the week she had run three times that distance. How far had Ashley run that week?

4. Miguel has a coin collection with 75 coins. $\frac{3}{5}$ of the coins are quarters.
How many quarters does Miguel have?

5. Mr. Howard is going to paint a mural that is $7\frac{1}{3}$ feet by $5\frac{2}{3}$ feet.
What is the total area of the mural he will paint?

6. Taylor bought a length of fabric to make curtains. The fabric is $1\frac{1}{8}$ yards wide and $6\frac{1}{2}$ yards long. What is the total area of the fabric?

7. Brad took a test that had 125 problems. He answered $\frac{4}{5}$ of the problems correctly.
How many problems did Brad answer correctly?

8. Mrs. West sent home 40 field trip forms with her students. So far, $\frac{3}{4}$ of the forms have been returned. How many forms still need to be turned in?

Divide Fractions with Reciprocals

One way to divide fractions is to multiply by the **reciprocal** of the divisor.

The product of a number and its reciprocal is 1. For example, the reciprocal of $\frac{3}{4}$ is $\frac{4}{3}$.

Rewrite a division problem as a multiplication problem. Use the reciprocal of the divisor as the second factor.	Multiply the fractions.	Simplify the quotient. Check your answer.
Divide: $4 \div \frac{2}{3}$ $\frac{4}{1} \times \frac{3}{2} =$	$\frac{4}{1} \times \frac{3}{2} = \frac{12}{2}$	$\frac{12}{2} = 6$ The quotient is 6. Check: $\frac{2}{3} \times 6 = 4$
Divide: $\frac{3}{5} \div 3$ $\frac{3}{5} \times \frac{1}{3} =$	$\frac{3}{5} \times \frac{1}{3} = \frac{3}{15}$	$\frac{3}{15} = \frac{1}{5}$ The quotient is $\frac{1}{5}$. Check: $3 \times \frac{1}{5} = \frac{3}{5}$

Find the quotient. Write the answer in simplest form.

1. $5 \div \frac{3}{4} =$ _____

2. $\frac{7}{8} \div \frac{1}{4} =$ _____

3. $\frac{1}{2} \div 4 =$ _____

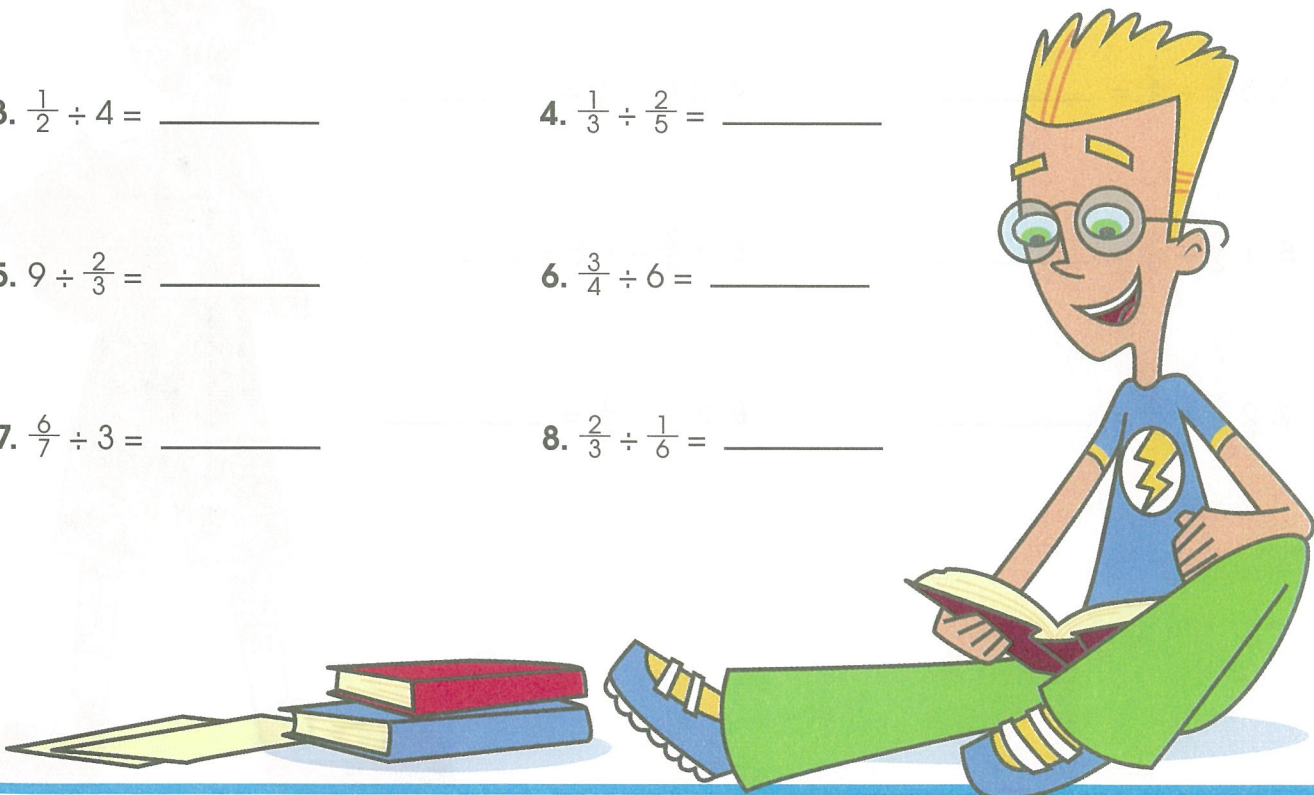
4. $\frac{1}{3} \div \frac{2}{5} =$ _____

5. $9 \div \frac{2}{3} =$ _____

6. $\frac{3}{4} \div 6 =$ _____

7. $\frac{6}{7} \div 3 =$ _____

8. $\frac{2}{3} \div \frac{1}{6} =$ _____

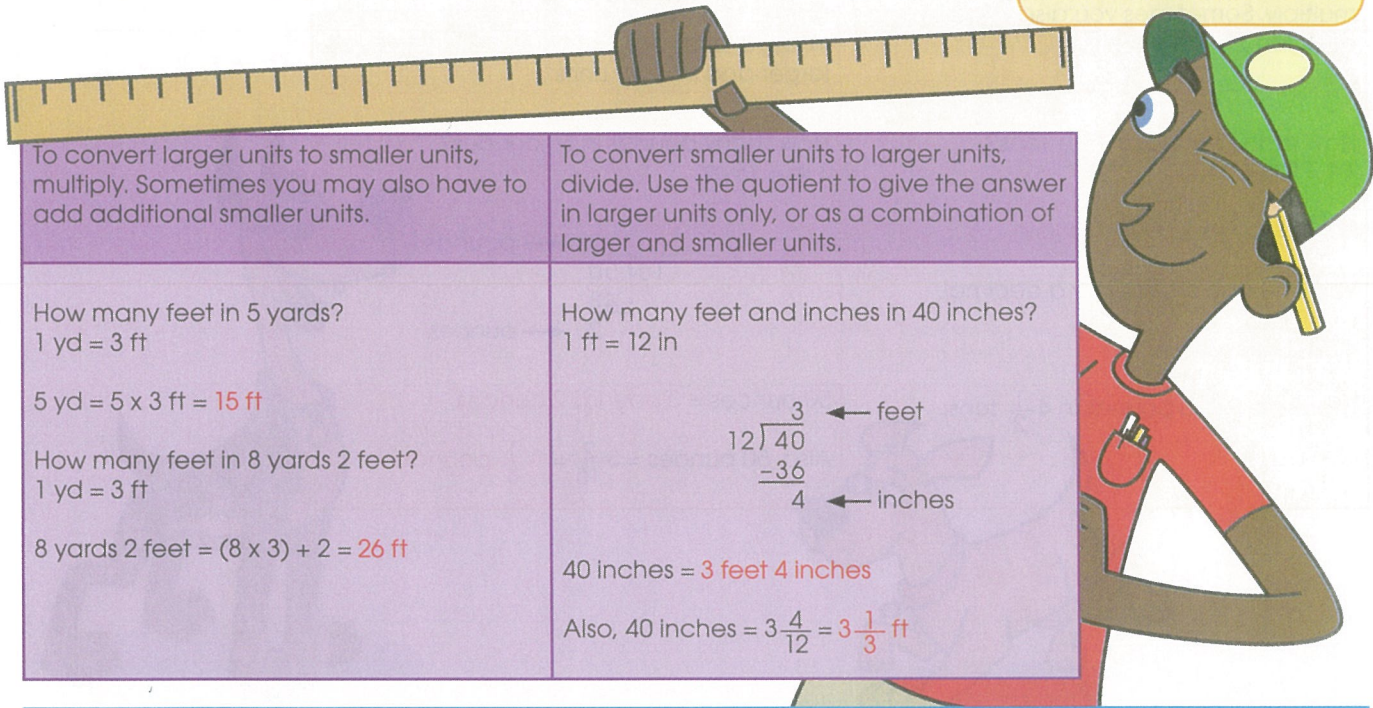


Customary Units of Length

The **inch** (in), **foot** (ft), **yard** (yd), and **mile** (mi) are customary units of measure.

Customary Units of Length

1 foot = 12 inches
1 yard = 3 feet
1 mile = 5,280 feet



To convert larger units to smaller units, multiply. Sometimes you may also have to add additional smaller units.

How many feet in 5 yards?

1 yd = 3 ft

$$5 \text{ yd} = 5 \times 3 \text{ ft} = 15 \text{ ft}$$

How many feet in 8 yards 2 feet?

1 yd = 3 ft

$$8 \text{ yards } 2 \text{ feet} = (8 \times 3) + 2 = 26 \text{ ft}$$

To convert smaller units to larger units, divide. Use the quotient to give the answer in larger units only, or as a combination of larger and smaller units.

How many feet and inches in 40 inches?

1 ft = 12 in

$$\begin{array}{r} 3 \text{ ← feet} \\ 12 \overline{)40} \\ \underline{-36} \\ 4 \text{ ← inches} \end{array}$$

40 inches = 3 feet 4 inches

$$\text{Also, } 40 \text{ inches} = 3 \frac{4}{12} = 3 \frac{1}{3} \text{ ft}$$

Complete the conversion.

1. 2 ft = _____ in

2. 76 in = _____ ft _____ in

3. 1 mi = _____ yd

4. 3 mi = _____ ft

5. 3 mi = _____ yd

6. 10 in = _____ ft

7. 20 in = _____ yd

8. 880 yd = _____ mi

9. 1,760 ft = _____ mi

Solve.

10. Kelly is 66 inches tall. How tall is she in feet and inches? _____



Since 1965, Canadian Gary Duschi has been making the world's longest gum wrapper chain. In 2012 it was 71,245 feet long. About how many miles long was the gum wrapper chain?

Customary Units of Capacity

The **cup** (c), **pint** (pt), **quart** (qt), and **gallon** (gal) are customary units of capacity.

To convert larger units to smaller units, multiply. Sometimes you also have to add additional smaller units.

How many pints in 2 gallons?
1 gal = 4 qt and 1 qt = 2 pt

so, 1 gal = 8 pt

2 gal = $8 \times 2 = 16$ pt

There are 16 pints in 2 gallons.

To convert smaller units to larger units, divide. Use the quotient to give the answer in larger units only, or as a combination of larger and smaller units.

How many cups and ounces are in 44 fluid ounces? 1 c = 8 fl oz

$$\begin{array}{r} 5 \text{ ← cups} \\ 8 \overline{) 44} \\ \underline{-40} \\ 4 \text{ ← fluid ounces} \end{array}$$

44 fluid ounces = 5 cups 4 fluid ounces
Also, 44 fluid ounces = $5 \frac{4}{8} = 5 \frac{1}{2}$ cups

Customary Units of Capacity

1 cup = 8 fluid ounces
1 pint = 2 cups
1 quart = 2 pints
1 gallon = 4 quarts



Complete the conversion.

1. 4 gal = _____ qt
2. 12 qt = _____ gal
3. 13 pt = _____ qt _____ pt
4. 2 qt = _____ oz
5. 20 oz = _____ c
6. 15 qt = _____ gal
7. 3 gal 2 qt = _____ qt
8. 3 pt 2 c = _____ oz
9. 96 oz = _____ qt

Solve.

10. Paco uses about 50 quarts of water to take a bath.
Anna uses about 15 gallons of water. Who uses more water to take a bath?

It's a FACT!

In 1981, two Australians made a pink gelatin dessert that filled a 9,246-gallon tank. How many 4-ounce servings would that make?

Metric Units of Length

The **millimeter** (mm), **centimeter** (cm), **meter** (m), and **kilometer** (km) are common metric units of length. The meter is the basic unit.

Metric Units of Length

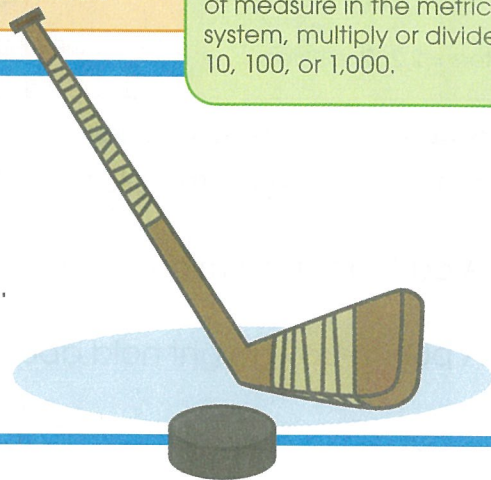
1 centimeter = 10 millimeters
 1 meter = 100 centimeters
 1 kilometer = 1,000 meters

To convert larger units to smaller units, multiply. Sometimes you also have to add additional smaller units.	To convert smaller units to larger units, divide. Use the quotient to give the answer in larger units only, or as a combination of larger and smaller units.
How many millimeters in 21 centimeters? 1 cm = 10 mm	How many kilometers is 4,852 meters? 1,000 m = 1 km
21 cm = $21 \times 10 = 210$ mm	$4,852 \text{ m} \div 1,000 = 4.852$ km
21 centimeters = 210 millimeters	4,852 meters = 4.852 kilometers

When converting units of measure in the metric system, multiply or divide by 10, 100, or 1,000.

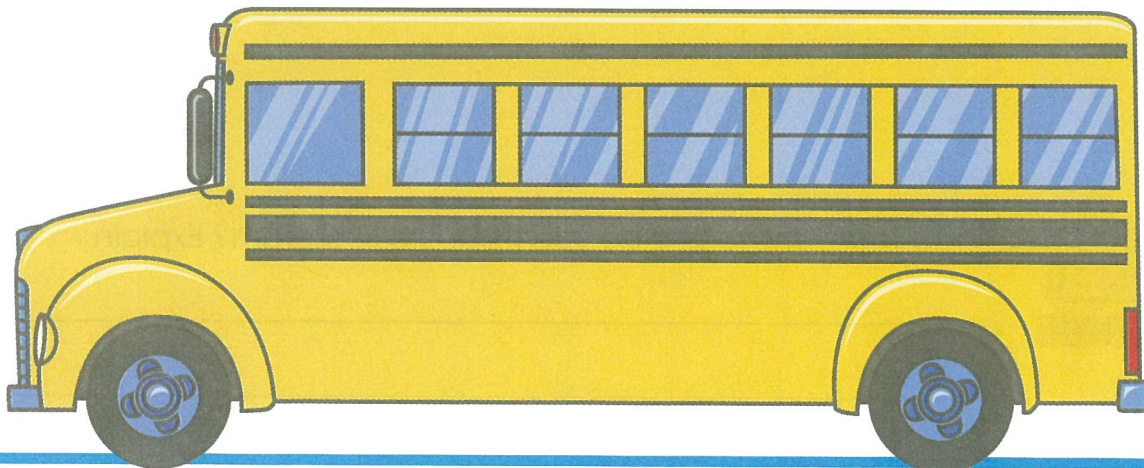
Write mm, cm, m, or km in the blank.

- A bus is about 10 _____ long.
- In 3 hours, you can drive about 180 _____.
- A hockey stick is about 130 _____ long.



Complete the conversion.

- | | | |
|-----------------------|------------------------|-----------------------|
| 4. 23 cm = _____ mm | 5. 1.2 m = _____ cm | 6. 763 m = _____ km |
| 7. 2.5 km = _____ m | 8. 358 m = _____ cm | 9. 4.6 m = _____ mm |
| 10. 1.8 cm = _____ mm | 11. 5,928 m = _____ km | 12. 1.08 m = _____ cm |



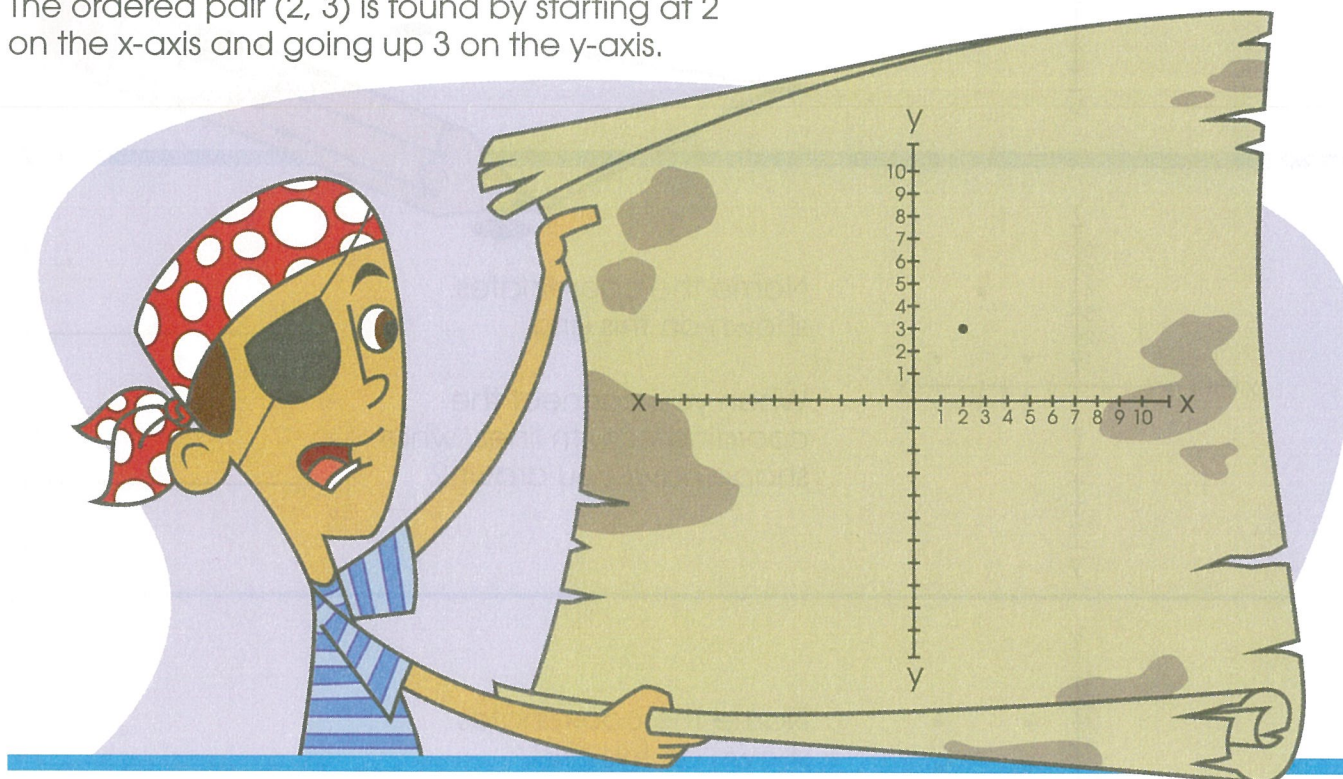
Coordinate Grids

A **coordinate grid** is formed when two perpendicular number lines (axes) meet at the origin point (0).

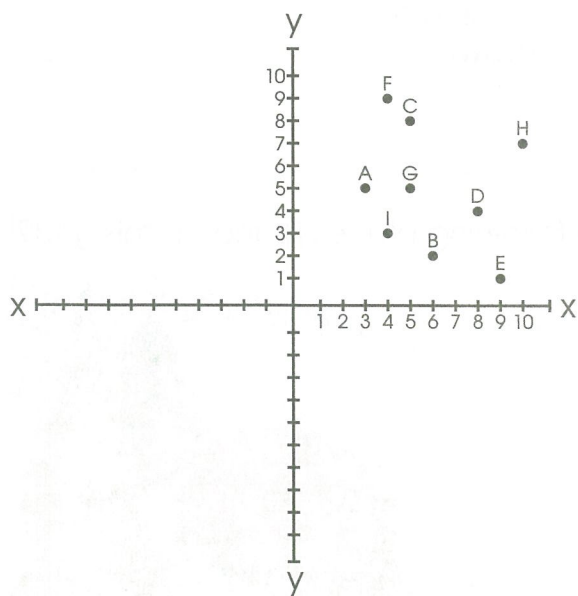
The horizontal line is the x-axis and the vertical line is the y-axis.

Ordered pairs of coordinates can be plotted on the coordinate grid. The first number is the x-coordinate and the second number is the y-coordinate.

The ordered pair (2, 3) is found by starting at 2 on the x-axis and going up 3 on the y-axis.



Write the coordinates for the points shown on the coordinate grid below.



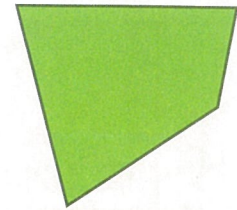
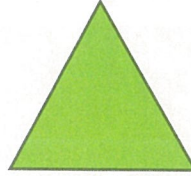
- | | |
|--------------|--------------|
| 1. A = _____ | 2. B = _____ |
| 3. C = _____ | 4. D = _____ |
| 5. E = _____ | 6. F = _____ |
| 7. G = _____ | 8. H = _____ |
| 9. I = _____ | |

Properties of Geometric Figures

Different geometric figures have different properties. Read the properties of different geometric figures and determine which shapes have those properties.

1. A quadrilateral is a four-sided polygon.

Circle the quadrilaterals.



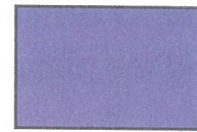
2. A parallelogram is a four-sided polygon with two pairs of congruent and parallel sides.

Circle the parallelograms.



3. A rectangle is a parallelogram with four right angles.

Circle the rectangles.



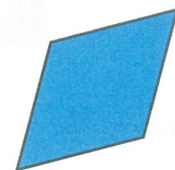
4. A rhombus is a parallelogram with all four sides equal in length.

Circle the rhombi.



5. A square is a parallelogram with four equal sides and four right angles.

Circle the squares.

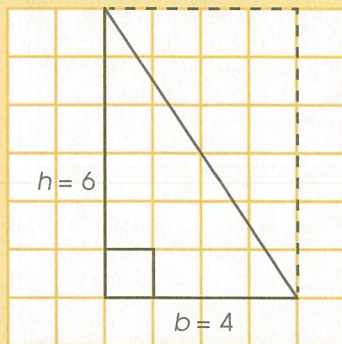


Area of Right Triangles

A **right triangle** is a triangle with a right angle. It is half of a rectangle. To find the area of a right triangle, multiply the base (b) by the height (h) and then divide by 2.

$$A = \frac{1}{2} \times b \times h$$

Area of a triangle:



$$A = \frac{1}{2} \times b \times h$$

$$A = \frac{1}{2} \times 4 \times 6$$

$$A = \frac{1}{2} \times 24$$

$$A = 12$$

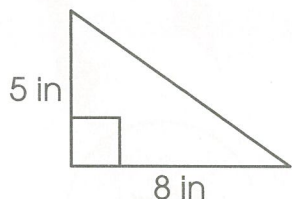
The triangle has an area of 12 square units.

Always express the area of a figure in square units—square inches, square meters, and so on.

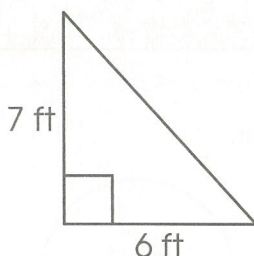


Find the area.

1.



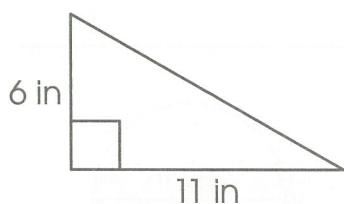
2.



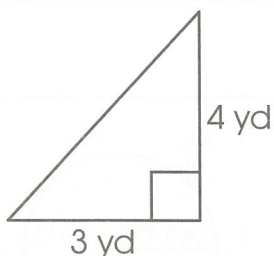
3.



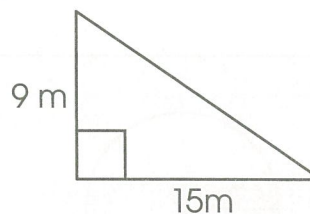
4.



5.



6.



Solve.

7. Find the area of a right triangle with a base of 22 cm and a height of 10 cm.

8. A triangle has an area of 24 square ft. Its base is 8 ft. What is its height?

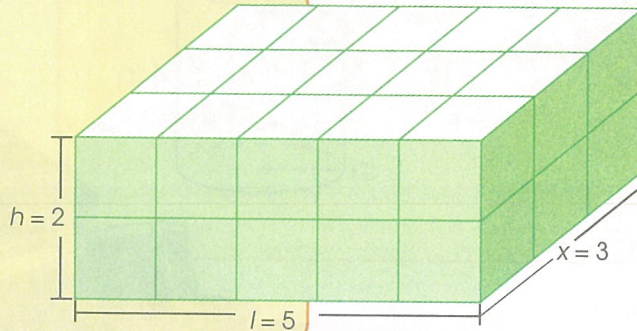
Volume of Rectangular Prisms

Volume is a measurement of the space taken up by a solid figure. Volume is measured in cubic units, such as cubic centimeters (cm^3), cubic meters (m^3), cubic feet (ft^3), or cubic yards (yd^3).

A **rectangular prism** is a solid shape made up of layers of cubic units.

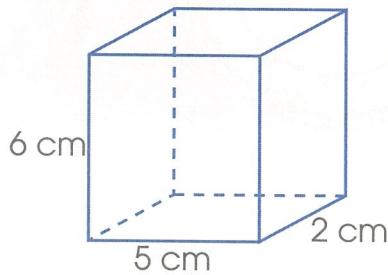
Find the volume of a rectangular prism.
 Each layer is 5×3 or 15 cm^3 .
 There are two layers.
 $2 \times 15 = 30$
 Volume = 30 cm^3

To find the volume of any rectangular prism:
 Volume = length \times width \times height
 $V = l \times w \times h$
 $V = 5 \times 3 \times 2$
 $V = 30 \text{ cm}^3$

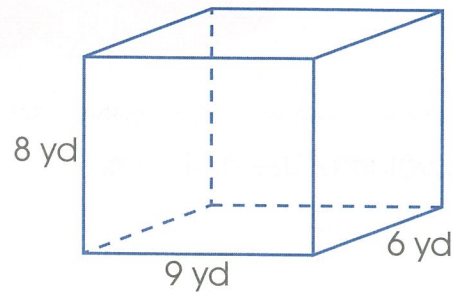


Find the volume.

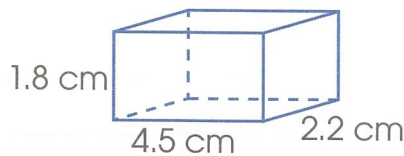
1.



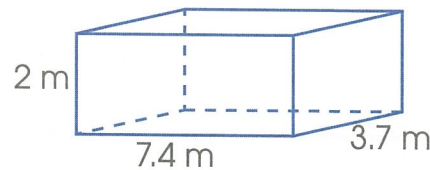
2.



3.



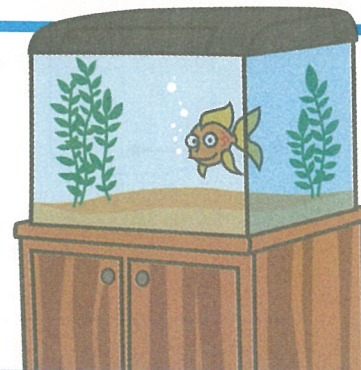
4.



Solve.

5. What is the volume of a boxcar that is 16 ft wide, 26 ft long, and 10 ft high? _____

6. An aquarium is 80 cm long, 40 cm wide, and 40 cm high. What is its volume? _____



Answers

Page 1

1. 4
2. 50
3. 10
4. 8
5. 12
6. 28
7. 48
8. 55
9. 22
10. 32
11. 20
12. 3

Page 2

1. 5
2. 34
3. 5
4. 21
5. 64
6. 10
7. 45
8. 15

Page 3

1. $(3 + 2) \times (36 \div 6)$
2. $(48 \div 8) \times 7$
3. $(40 + 20) \div 15$
4. $(3 \times 6) + (2 \times 9)$
5. $(6 \times 8) - (24 \div 4)$
6. $(5 \times 9) + 30$
7. $(49 - 37) \times 6$
8. $2 \times (25 + 17)$

Page 4

1. $[(6 \times 6) - (4 + 8)]$
2. $[3 \times 7 + (56 - 49)]$
3. $[4 \times (397 + 245)]$
4. $[(18 - 9) \times (10 + 15)]$
5. $[(32 + 8) \div 5]$
6. $[7 \times 2 \times (58 - 21)]$
7. $[(6 \times (49 - 19))]$
8. $[(9 \times 5) - (24 + 11)]$

Page 5

1. 0, 10, 20, 30, 40, 50, 60, 70
2. 3, 10, 17, 24, 31, 38, 45, 52
3. 2, 6, 18, 54, 162, 486
4. 0, 4, 8, 12, 16, 20, 24, 28
5. 1, 101, 201, 301, 401, 501
6. 5, 13, 21, 29, 37, 45, 53, 61
7. 50, 130, 210, 290, 370, 450
8. 0, 12, 24, 36, 48, 60, 72, 84

Page 6

1. (1, 1), (3, 4), (5, 7), (7, 10), (9, 13), (11, 16), (13, 19), (15, 22)
2. (2, 5), (4, 10), (6, 15), (8, 20), (10, 25), (12, 30), (14, 35), (16, 40)
3. (Start at 0 and add 3. Start at 0 and add 2.)
4. (Start at 1 and multiply by 2. Start at 1 and multiply by 3.)
5. (Start at 1 and add 2. Start at 2 and add 2.)
6. (Start at 1 and multiply by 3. Start at 1 and multiply by 5.)

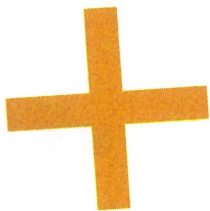
Page 7

1. <
2. >
3. >
4. >
5. >
6. <
7. 84,652; 85,462; 85,662
8. 189,908; 189,998; 198,598; 198,958



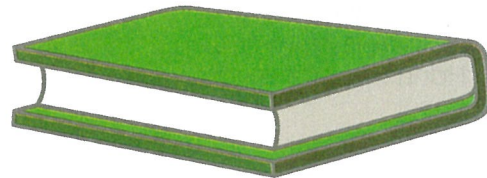
Page 8

1. thousands - 7, hundreds - 9, tens - 2, ones - 8
2. thousands - 4, hundreds - 1, tens - 6, ones - 9
3. thousands - 2, hundreds - 5, tens - 8, ones - 0
4. $5,000 + 300 + 0 + 6$
5. $1,000 + 900 + 70 + 3$
6. $8,000 + 800 + 40 + 2$
7. $9,000 + 0 + 50 + 1$
8. $6,000 + 500 + 40 + 4$



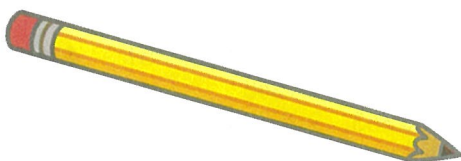
Page 9

1. 83,749
2. 312,956
3. 781,025
4. 42,971
5. $600,000 + 30,000 + 4,000 + 500 + 90 + 8$
6. $100,000 + 80,000 + 0 + 900 + 20 + 6$
7. $90,000 + 4,000 + 200 + 50 + 3$
8. $200,000 + 70,000 + 7,000 + 800 + 60 + 9$



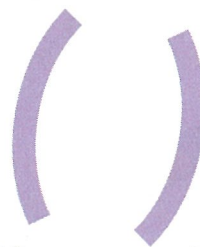
Page 10

1. $500,000,000 + 90,000,000 + 7,000,000 + 300,000 + 20,000 + 8,000 + 600 + 10 + 1$
2. $800,000,000 + 60,000,000 + 1,000,000 + 900,000 + 50,000 + 2,000 + 700 + 40 + 9$
3. $600,000,000 + 40,000,000 + 8,000,000 + 200,000 + 50,000 + 1,000 + 0 + 90 + 3$
4. 203,716,985
5. 192,835,460
6. 703,716,914



Page 11

1. 400
2. 540
3. 7,000
4. 200
5. 280
6. 27,000
7. 100,000
8. 3,600
9. 420
10. 7,200
11. 20,000
12. 800
13. 240
14. 120
15. 16,000
16. 5,600
17. 15,000
18. 180,000



Page 12

1. 15,000
2. 3,000
3. 60,000
4. 3,000
5. 80,000
6. 10,000
7. >
8. <
9. 100,000 boxes

Page 13

1. 270
2. 72
3. 280
4. 1,400
5. 3,900
6. 315
7. 486
8. 920
9. 240
10. 102
11. 50,400
12. 90

Page 14

1. 37.981
2. 520.463
3. 81.057
4. 978.206
5. 326.705
6. 14.839
7. 805.174
8. 67.928

Page 15

1. 0.36
2. 10.6
3. 3.05
4. 0.027
5. 4
6. 3
7. 5
8. 0
9. tenths
10. hundredths
11. thousands

Answers

Page 31

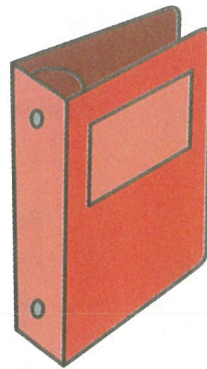
1. 5.12 2. \$2.84 3. 4.15 4. 1.32
 5. 2.1 6. 7.2 7. 0.6 8. \$0.28
 9. 34.2 10. 2.69
 11. Each piece will be 4.3 feet.

Page 32

1. 0.014 2. 0.04 3. \$0.07 4. 0.056
 5. 5.25 6. \$14.15 7. 0.006 8. 0.007

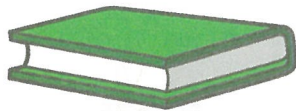
Page 33

1. $\frac{7}{3}$ 2. $\frac{13}{8}$ 3. $\frac{17}{5}$
 4. $\frac{31}{6}$ 5. $\frac{18}{5}$
 6. $2\frac{5}{8}$ 7. $2\frac{1}{2}$ 8. 3
 9. $1\frac{2}{9}$ 10. $3\frac{3}{4}$
 11. They drank $4\frac{2}{3}$ six packs
 Challenge: $2\frac{1}{2}$



Page 34

1. $1\frac{1}{12}$ 2. $\frac{5}{6}$ 3. $\frac{5}{8}$
 4. $\frac{11}{15}$ 5. $\frac{7}{8}$ 6. $1\frac{1}{10}$
 7. $1\frac{1}{4}$ 8. 1
 9. $1\frac{17}{24}$
 10. Lisa swam $\frac{11}{16}$ of a mile.

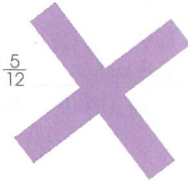


Page 35

1. $\frac{1}{6}$ 2. $\frac{3}{8}$ 3. $\frac{1}{24}$
 4. $\frac{1}{2}$ 5. $\frac{1}{24}$ 6. $\frac{1}{2}$
 7. $\frac{1}{4}$ 8. $\frac{13}{40}$
 9. $\frac{4}{15}$
 10. Bonita spent more time reading; $\frac{1}{12}$ of an hour longer or 5 minutes longer.

Page 36

1. $5\frac{1}{2}$ 2. $10\frac{1}{20}$ 3. $7\frac{5}{12}$
 4. $5\frac{17}{24}$
 5. $4\frac{1}{9}$
 6. $12\frac{7}{20}$
 Brain Boggler: $\frac{4}{4} + \frac{4}{4} + 4 + 4 = 10$



Page 37

1. $3\frac{1}{2}$ 2. $3\frac{7}{10}$ 3. $4\frac{7}{24}$
 4. $2\frac{1}{2}$
 5. $4\frac{11}{15}$
 6. $2\frac{3}{4}$
 7. Nate broke the record by $\frac{7}{12}$ of a foot.

Page 38

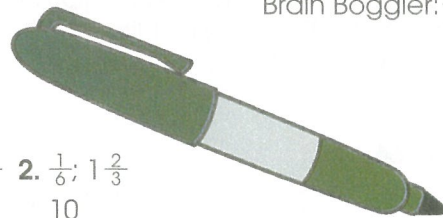
1. 9 2. 6 3. 3 4. 0
 5. about 8 6. about 6
 7. about 12 8. about 5
 9. about 4 10. about 10
 11. about 7 hours; yes;
 $\frac{3}{4}$ and $\frac{1}{4} = 1$,
 so $3\frac{3}{4}$ and $1\frac{1}{4}$ are 5.
 5 and $1\frac{1}{2} = 6\frac{1}{2}$.

Page 39

1. $\frac{1}{12}$ 2. $\frac{2}{9}$
 3. $\frac{3}{8}$ 4. $\frac{1}{2}$
 5. $4\frac{1}{2}$ 6. $2\frac{2}{5}$
 7. $\frac{3}{10}$ 8. 1
 9. $\frac{1}{4}$

Page 40

1. $2\frac{1}{2}$ 2. 6
 3. 10 4. $7\frac{7}{8}$
 5. $\frac{3}{5}$ 6. 2
 7. 14 8. $2\frac{11}{12}$
 9. 10
 Brain Boggler: $\frac{1}{2}$



Page 41

1. $\frac{4}{4} \times \frac{1}{3} = \frac{4}{12}$ or $\frac{1}{3}$
 2. $\frac{5}{6} \times \frac{2}{3} = \frac{10}{18}$ or $\frac{5}{9}$

Page 42

1. $\frac{5}{7} \times \frac{3}{4} = \frac{15}{28}$
 2. $\frac{3}{6} \times \frac{3}{5} = \frac{9}{30}$ or $\frac{3}{10}$

Page 43

1. $16\frac{1}{3}$ square feet
 2. 22 red grapes
 3. $8\frac{5}{8}$ miles
 4. 45 quarters
 5. $41\frac{5}{9}$ square feet
 6. $7\frac{5}{16}$ square yards
 7. 100 problems
 8. 10 forms

Page 44

1. $\frac{3}{4}$; $2\frac{1}{4}$ 2. $\frac{1}{6}$; $1\frac{2}{3}$
 3 10
 3. 3 4. 3 5. 3
 6. 5 7. 2 8. 4

Brain Boggler: 11 quarters; 11; Each problem represents the same numbers. They are different because one problem uses decimals and the other problem uses fractions.

Page 45

1. $6\frac{2}{3}$ 2. $3\frac{1}{2}$
 3. $\frac{1}{8}$ 4. $\frac{5}{6}$
 5. $13\frac{1}{2}$ 6. $\frac{1}{8}$
 7. $\frac{2}{7}$ 8. 4

Page 46

1. $1\frac{7}{9}$ 2. $\frac{7}{18}$
 3. $8\frac{1}{4}$ 4. $7\frac{1}{5}$
 5. $7\frac{1}{2}$ 6. $3\frac{1}{7}$
 7. 6 8. $6\frac{2}{3}$

Page 47

1. 24 in 2. 6 ft 4 in 3. 1,760 yd
 4. 15,840 ft 5. 5,280 yd 6. $\frac{5}{6}$ ft
 7. $\frac{5}{9}$ yd 8. $\frac{1}{2}$ mi 9. $\frac{1}{3}$ mi
 10. 5 ft 6 in
 It's a Fact!: about $13\frac{1}{2}$ miles

