Academy of Greatness and Excellence

2020-2021

6th Grade Summer Math Assignment

Congratulations on becoming a sixth grader! To better prepare you for a more demanding Math curriculum, your Summer Math Work is attached with a variety of problems. Here is what to do:

- Print out the packet. Work on each question with pencil alone.
- Show all of your work right on the packet (Do not use a separate sheet of paper unless you need extra space to show your work. Attach any extra sheets if used with your packet with proper question number written with the solution).
- Bring your completed packet with you to submit **on or before September 21, 2020** and hand it over to your Math teacher.

*****Calculators are NOT allowed, unless only used to check your work!*****

You will receive an ASSIGNMENT GRADE for the entire packet! This will be your first assignment grade of the year counted towards First Trimester.

There might be questions in the packet that you don't know how to do, however credit will be given if you show that you tried!

Remember...if you need a little extra help, you can visit these websites!

https://www.khanacademy.org
http://www.coolmath.com
http://www.mathisfun.com
http://www.math-drills.com

Place Value of Whole Numbers

You can use a place-value chart to help you understand whole numbers and the value of each digit. A **period** is a group of three digits within a number separated by a comma.

Millions Period			Thousands Period			Ones Period		
Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones
		2,	3	6	7,	0	8	9

Standard form: 2,367,089

Expanded Form: Multiply each digit by its place value, and then write an addition expression.

$(2 \times 1{,}000{,}000) + (3 \times 100{,}000) + (6 \times 10{,}000) + (7 \times 1{,}000) + (8 \times 10) + (9 \times 1)$

Word Form: Write the number in words. Notice that the millions and the thousands periods are followed by the period name and a comma.

two million, three hundred sixty-seven thousand, eighty-nine

To find the value of an underlined digit, multiply the digit by its place value. In 2,367,089, the value of 2 is $2 \times 1{,}000{,}000$, or 2,000,000.

Write the value of the underlined digit.

1. 153,732,991

_____

2. 236,143,802

_____

3. 264,807

_____

4. 78,209,146

_____

Write the number in two other forms.

5. 701,245

_____

_____

6. 40,023,032

_____

_____

Algebra • Properties

Properties of operations are characteristics of the operations that are always true.

Property	Examples
Commutative Property of Addition or Multiplication	Addition: $3 + 4 = 4 + 3$ Multiplication: $8 \times 2 = 2 \times 8$
Associative Property of Addition or Multiplication	Addition: $(1 + 2) + 3 = 1 + (2 + 3)$ Multiplication: $6 \times (7 \times 2) = (6 \times 7) \times 2$
Distributive Property	$8 \times (2 + 3) = (8 \times 2) + (8 \times 3)$
Identity Property of Addition	$9 + 0 = 9$ $\quad 0 + 3 = 3$
Identity Property of Multiplication	$54 \times 1 = 54$ $\quad 1 \times 16 = 16$

Use properties to find $37 + 24 + 43$.

$37 + 24 + 43 = 24 + \underline{37} + 43$ — Use the Commutative Property of Addition to reorder the addends.

$= 24 + (37 + 43)$ — Use the Associative Property of Addition to group the addends.

$= 24 + \underline{80}$ — Use mental math to add.

$= \underline{104}$

Grouping 37 and 43 makes the problem easier to solve because their sum, **80**, is a multiple of 10.

Use properties to find the sum or product.

1. $31 + 27 + 29$ **2.** $41 \times 0 \times 3$ **3.** $4 + (6 + 21)$

Complete the equation, and tell which property you used.

4. $(2 \times \_\_\_\_) + (2 \times 2) = 2 \times (5 + 2)$ **5.** $\_\_\_\_ \times 1 = 15$

Algebra • Powers of 10 and Exponents

You can represent repeated factors with a base and an exponent.

Write 10 × 10 × 10 × 10 × 10 × 10 in exponent form.

10 is the repeated factor, so 10 is the **base**.

The base is repeated 6 times, so 6 is the **exponent**.

$10 \times 10 \times 10 \times 10 \times 10 \times 10 = 10^6$

10^6 ← exponent

↑

base

A base with an exponent can be written in words.

Write 10^6 in words.

The exponent 6 means "the sixth power."

10^6 in words is "the sixth power of ten."

You can read 10^2 in two ways: "ten squared" or "the second power of ten."

You can also read 10^3 in two ways: "ten cubed" or "the third power of ten."

Write in exponent form and in word form.

1. $10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$

exponent form: _____ word form: _____

2. $10 \times 10 \times 10$

exponent form: _____ word form: _____

3. $10 \times 10 \times 10 \times 10 \times 10$

exponent form: _____ word form: _____

Find the value.

4. 10^4 **5.** 2×10^3 **6.** 6×10^2

_____ _____ _____

Algebra • Multiplication Patterns

You can use basic facts, patterns, and powers of 10 to help you multiply whole numbers by multiples of 10, 100, and 1,000.

Use mental math and a pattern to find 90 × 6,000.

- 9 × 6 is a basic fact. $9 \times 6 = 54$
- Use basic facts, patterns, and powers of 10 to find 90 × 6,000.

$9 \times 60 = (9 \times 6) \times 10^1$
$= 54 \times 10^1$
$= 54 \times 10$
$= 540$

$9 \times 600 = (9 \times 6) \times 10^2$
$= 54 \times 10^2$
$= 54 \times 100$
$= 5{,}400$

$9 \times 6{,}000 = (9 \times 6) \times 10^3$
$= 54 \times 10^3$
$= 54 \times 1{,}000$
$= 54{,}000$

$90 \times 6{,}000 = (9 \times 6) \times (10 \times 1{,}000)$
$= 54 \times 10^4$
$= 54 \times 10{,}000$
$= 540{,}000$

So, 90 × 6,000 = 540,000.

Use mental math to complete the pattern.

1. $3 \times 1 = 3$

$3 \times 10^1 =$ _____

$3 \times 10^2 =$ _____

$3 \times 10^3 =$ _____

2. $8 \times 2 = 16$

$(8 \times 2) \times 10^1 =$ _____

$(8 \times 2) \times 10^2 =$ _____

$(8 \times 2) \times 10^3 =$ _____

3. $4 \times 5 = 20$

$(4 \times 5) \times$ _____ $= 200$

$(4 \times 5) \times$ _____ $= 2{,}000$

$(4 \times 5) \times$ _____ $= 20{,}000$

4. $7 \times 6 =$ _____

$(7 \times 6) \times$ _____ $= 420$

$(7 \times 6) \times$ _____ $= 4{,}200$

$(7 \times 6) \times$ _____ $= 42{,}000$

Multiply by 2-Digit Numbers

You can use place value and regrouping to multiply.

Find 29 × 63.

Step 1 Write the problem vertically.
Multiply by the ones.

$$\begin{array}{r} 2 \\ 63 \\ \times\ 29 \\ \hline 567 \end{array} \leftarrow 63 \times 9 = (\underline{60} \times 9) + (\underline{3} \times 9)$$
$$= \underline{540} + \underline{27}, \text{ or } \underline{567}$$

Step 2 Multiply by the tens.

$$\begin{array}{r} 2 \\ 63 \\ \times\ 29 \\ \hline 567 \\ 1{,}260 \end{array} \leftarrow 63 \times 20 = (\underline{60} \times 20) + (\underline{3} \times 20)$$
$$= \underline{1{,}200} + \underline{60}, \text{ or } \underline{1{,}260}$$

Step 3 Add the partial products.

$$\begin{array}{r} 63 \\ \times\ 29 \\ \hline 567 \\ +\ 1{,}260 \\ \hline 1{,}827 \end{array}$$

So, 63 × 29 = 1,827.

Complete to find the product.

1. $\begin{array}{r} 57 \\ \times\ 14 \end{array}$

← 57 × ____

\+ _____ ← 57 × ____

2. $\begin{array}{r} 76 \\ \times\ 45 \end{array}$

← 76 × ____

\+ _____ ← 76 × ____

3. $\begin{array}{r} 139 \\ \times\ 12 \end{array}$

← 139 × ____

\+ _____ ← 139 × ____

4. Find 26 × 69. Estimate first.

$$\begin{array}{r} 69 \\ \times\ 26 \end{array}$$

Estimate: _____

Algebra • Evaluate Numerical Expressions

A **numerical expression** is a mathematical phrase that includes only numbers and operation symbols.

You **evaluate** the expression when you perform all the computations to find its value.

Order of Operations
1. Parentheses
2. Multiply and Divide
3. Add and Subtract

To evaluate an expression, use the **order of operations.**

Evaluate the expression $(10 + 6 \times 6) - 4 \times 10$.

Step 1 Start with computations inside the parentheses.

$10 + 6 \times 6$

Step 2 Perform the order of operations inside the *parentheses*.

Multiply and divide from left to right.

$10 + 6 \times 6 = 10 + \underline{36}$

Add and subtract from left to right.

$10 + 36 = \underline{46}$

Step 3 Rewrite the expression with the parentheses evaluated.

$46 - 4 \times 10$

Step 4 *Multiply and divide* from left to right.

$46 - 4 \times 10 = 46 - \underline{40}$

Step 5 *Add and subtract* from left to right.

$46 - 40 = \underline{6}$

So, $(10 + 6 \times 6) - 4 \times 10 = 6$.

Evaluate the numerical expression.

1. $8 - (7 \times 1)$

2. $5 - 2 + 12 \div 4$

3. $8 \times (16 \div 2)$

4. $4 \times (28 - 20 \div 2)$

5. $(30 - 9 \div 3) \div 9$

6. $(6 \times 6 - 9) - 9 \div 3$

7. $11 \div (8 + 9 \div 3)$

8. $13 \times 4 - 65 \div 13$

9. $9 + 4 \times 6 - 65 \div 13$

Algebra • Grouping Symbols

Parentheses ( ), *brackets* [ ], and *braces* { }, are different grouping symbols used in expressions. To evaluate an expression with different grouping symbols, perform the operation in the innermost set of grouping symbols first. Then evaluate the expression from the inside out.

Evaluate the expression $2 \times [(9 \times 4) - (17 - 6)]$.

Step 1 Perform the operations in the *parentheses* first.

$2 \times [(9 \times 4) - (17 - 6)]$

$2 \times [\ \underline{36}\ - \ \underline{11}\ ]$

Step 2 Next perform the operations in the *brackets*.

$2 \times [\ 36 - 11\ ]$

$2 \times \ \underline{25}$

Step 3 Then multiply.

$2 \times 25 = \underline{50}$

So, $2 \times [(9 \times 4) - (17 - 6)] = \underline{50}$

Evaluate the numerical expression.

1. $4 \times [(15 - 6) \times (7 - 3)]$

$4 \times [9 \times$ _____ $]$

$4 \times [$ _____ $]$

_____

2. $40 - [(8 \times 7) - (5 \times 6)]$

_____

3. $60 \div [(20 - 6) + (14 - 8)]$

_____

4. $5 + [(10 - 2) + (4 - 1)]$

_____

5. $3 \times [(9 + 4) - (2 \times 6)]$

_____

6. $32 \div [(7 \times 2) - (2 \times 5)]$

_____

Divide by 1-Digit Divisors

You can use compatible numbers to help you place the first digit in the quotient. Then you can divide and check your answer.

Divide. $4\overline{)757}$

Step 1 Estimate with compatible numbers to decide where to place the first digit.

$757 \div 4$

$\downarrow$

$800 \div 4 = 200$

The first digit of the quotient is in the hundreds place.

Step 2 Divide.

$$\begin{array}{r} 189 \text{ r1} \\ 4\overline{)757} \\ -4\downarrow \\ \hline 35 \\ -32\downarrow \\ \hline 37 \\ -36 \\ \hline 1 \end{array}$$

Step 3 Check your answer.

$$\begin{array}{rl} 189 & \leftarrow \text{quotient} \\ \times\ 4 & \leftarrow \text{divisor} \\ \hline 756 & \\ +\ \ 1 & \leftarrow \text{remainder} \\ \hline 757 & \leftarrow \text{dividend} \end{array}$$

Since 189 is close to the estimate of 200, the answer is reasonable.

So, $757 \div 4$ is 189 r1.

Divide. Check your answer.

1. $8\overline{)136}$

2. $7\overline{)297}$

3. $5\overline{)8{,}126}$

4. $7\overline{)4{,}973}$

5. $3\overline{)741}$

6. $7\overline{)456}$

Partial Quotients

Divide. Use partial quotients.

858 ÷ 57

		Quotient
Step 1 Estimate the number of groups of 57 that are in 858. You know 57 × 10 = 570. Since 570 < 858, at least 10 groups of 57 are in 858. Write 10 in the quotient column, because 10 groups of the divisor, 57, are in the dividend, 858.	858 −570 288	10
Step 2 Now estimate the number of groups of 57 that are in 288. You know 60 × 4 = 240. So at least 4 groups of 57 are in 288. Subtract 228 from 288, because 57 × 4 = 228. Write 4 in the quotient column, because 4 groups of the divisor, 57, are in 288.	288 −228 60	4
Step 3 Identify the number of groups of 57 that are in 60. 57 × 1 = 57, so there is 1 group of 57 in 60. Write 1 in the quotient column.	60 −57 remainder → 3	+ 1 15
Step 4 Find the total number of groups of the divisor, 57, that are in the dividend, 858, by adding the numbers in the quotient column. Include the remainder in your answer.		**Answer: 15 r3**

Divide. Use partial quotients.

1. $17\overline{)476}$

2. $14\overline{)365}$

3. $25\overline{)753}$

4. 462 ÷ 11

5. 1,913 ÷ 47

6. 1,085 ÷ 32

Divide by 2-Digit Divisors

When you divide by a 2-digit divisor, you can use estimation to help you place the first digit in the quotient. Then you can divide.

Divide. $53\overline{)2{,}369}$

Step 1 Use compatible numbers to estimate the quotient. Then use the estimate to place the first digit in the quotient.

$$\begin{array}{r} 40 \\ 50\overline{)2{,}000} \end{array}$$

The first digit will be in the tens place.

Step 2 Divide the tens.

$$\begin{array}{r} 4 \\ 53\overline{)2{,}369} \\ -\ 212 \\ \hline 24 \end{array}$$

Think:

Divide: 236 tens ÷ 53

Multiply: 53 × 4 tens = 212 tens

Subtract: 236 tens − 212 tens

Compare: 24 < 53, so the first digit of the quotient is reasonable.

Step 3 Bring down the 9 ones. Then divide the ones.

$$\begin{array}{r} 44\ \text{r}37 \\ 53\overline{)2{,}369} \\ -\ 212\downarrow \\ \hline 249 \\ -\ 212 \\ \hline 37 \end{array}$$

Think:

Divide: 249 ones ÷ 53

Multiply: 53 × 4 ones = 212 ones

Subtract: 249 ones − 212 ones

Compare: 37 < 53, so the second digit of the quotient is reasonable.

So, 2,369 ÷ 53 is **44 r37**.

Write the remainder to the right of the whole number part of the quotient.

Divide. Check your answer.

1. $52\overline{)612}$
2. $63\overline{)917}$
3. $89\overline{)1{,}597}$
4. $43\overline{)641}$
5. $27\overline{)4{,}684}$
6. $64\overline{)8{,}455}$

Place Value of Decimals

You can use a place-value chart to find the value of each digit in a decimal.
Write whole numbers to the left of the decimal point.
Write decimals to the right of the decimal point.

Ones	Tenths	Hundredths	Thousandths
3	8	4	7
3×1	$8 \times \frac{1}{10}$	$4 \times \frac{1}{100}$	$7 \times \frac{1}{1{,}000}$
3.0	0.8	0.04	0.007

Value

The place value of the digit 8 in 3.847 is tenths.

The value of 8 in 3.847 is $8 \times \frac{1}{10}$, or 0.8.

You can write a decimal in different forms.

Standard Form: 3.847

Expanded Form: 3 $\times 1 +$ 8 $\times \frac{1}{10} +$ 4 $\times (\frac{1}{100}) +$ 7 $\times (\frac{1}{1{,}000})$

When you write the decimal in word form, write "and" for the decimal point.

Word Form: three and eight hundred forty-seven thousandths

1. Complete the place-value chart to find the value of each digit.

Ones	Tenths	Hundredths	Thousandths
2	6	9	5
2×1		$9 \times \frac{1}{100}$	
	0.6		

Value

Write the value of the underlined digit.

2. 0.7<u>9</u>2 **3.** 4.<u>6</u>91 **4.** 3.80<u>5</u>

Compare and Order Decimals

You can use a place-value chart to compare decimals.

Compare. Write <, >, or =.

4.375 ◯ 4.382

Write both numbers in a place-value chart. Then compare the digits, starting with the highest place value. Stop when the digits are different and compare.

Ones	Tenths	Hundredths	Thousandths
4	3	7	5
4	3	8	2

The ones digits are the same. The tenths digits are the same. The hundredths digits are different.

The digits are different in the hundredths place.

Since 7 hundredths < 8 hundredths, 4.375 (<) 4.382.

1. Use the place-value chart to compare the two numbers. What is the greatest place-value position where the digits differ?

Ones	Tenths	Hundredths	Thousandths
2	8	6	5
2	8	6	1

_____

Compare. Write <, >, or =.

2. 5.37 ◯ 5.370 | **3.** 9.425 ◯ 9.417 | **4.** 7.684 ◯ 7.689

Name the greatest place-value position where the digits differ.
Name the greater number.

5. 8.675; 8.654

_____

_____

6. 3.086; 3.194

_____

_____

7. 6.243; 6.247

_____

_____

Order from least to greatest.

8. 5.04; 5.4; 5.406; 5.064

_____

9. 2.614; 2.146; 2.46; 2.164

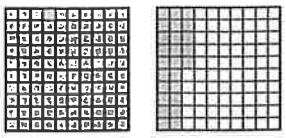
_____

Decimal Addition

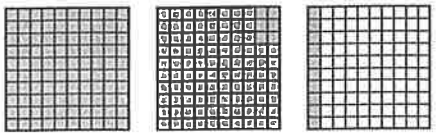
You can use decimal models to help you add decimals.

Add. 1.25 + 0.85

Step 1 Shade squares to represent 1.25.



Step 2 Shade additional squares to represent adding 0.85.



Remember:
Since there are only 75 squares left in the second model, you need to add another whole model for the remaining 10 squares.

Step 3 Count the total number of shaded squares. There are 2 whole squares and 10 one-hundredths squares shaded. So, 2.10 wholes in all are shaded.

So, 1.25 + 0.85 = 2.10.

Add. Use decimal models. Draw a picture to show your work.

1. 2.1 + 0.59

_____

2. 1.4 + 0.22

_____

3. 1.27 + 1.15

_____

4. 0.81 + 0.43

_____

Add Decimals

Add. 4.37 + 9.8

Step 1 Estimate the sum.

4.37 + 9.8
↓ ↓
Estimate: 4 + 10 = 14

Step 2 Line up the place values for each number in a place-value chart. Then add.

	Ones	Tenths	Hundredths
	4	3	7
+	9	8	
	14	1	7

← sum

Step 3 Use your estimate to determine if your answer is reasonable.

Think: 14.17 is close to the estimate, 14. The answer is reasonable.

So, 4.37 + 9.8 = **14.17**.

Estimate. Then find the sum.

1. Estimate: ____

1.20
+ 0.34

2. Estimate: ____

1.52
+ 1.21

3. Estimate: ____

12.25
+ 11.25

4. Estimate: ____

10.75
+ 1.11

5. Estimate: ____

22.65
+ 18.01

6. Estimate: ____

34.41
+ 15.37

Subtract Decimals

Subtract. 12.56 − 4.33

Step 1 Estimate the difference.

12.56 − 4.33
↓ ↓
Estimate: 13 − 4 = 9

Step 2 Line up the place values for each number in a place-value chart. Then subtract.

	Ones	Tenths	Hundredths
	12	5	6
−	4	3	3
	8	2	3

← difference

Step 3 Use your estimate to determine if your answer is reasonable.

Think: 8.23 is close to the estimate, 9. The answer is reasonable.

So, 12.56 − 4.33 = **8.23**.

Estimate. Then find the difference.

1. Estimate: ____

1.97
− 0.79

2. Estimate: ____

4.42
− 1.26

3. Estimate: ____

10.25
− 8.25

Find the difference. Check your answer.

4. 5.75
− 1.11

5. 25.21
− 19.05

6. 42.14
− 25.07

Algebra • Patterns with Decimals

Marla wants to download some songs from the Internet. The first song costs $1.50, and each additional song costs $1.20. How much will 2, 3, and 4 songs cost?

1 song
$1.50

2 songs
?

3 songs
?

4 songs
?

Step 1 Identify the first term in the sequence.
Think: The cost of 1 song is $1.50. The first term is $1.50.

Step 2 Identify whether the sequence is increasing or decreasing from one term to the next.
Think: Marla will pay $1.20 for each additional song.
The sequence is increasing.

Step 3 Write a rule that describes the sequence. Start with $1.50 and add $1.20.

Step 4 Use your rule to find the unknown terms in the sequence.

Number of Songs	1	2	3	4
Cost	$1.50	1.50 + 1.20 = **$2.70**	2.70 + 1.20 = **$3.90**	3.90 + 1.20 = **$5.10**

So, 2 songs cost $2.70, 3 songs cost $3.90, and 4 songs cost $5.10.

Write a rule for the sequence.

1. 0.4, 0.7, 1.0, 1.3, ...

Rule: _____

2. 5.25, 5.00, 4.75, 4.50, ...

Rule: _____

Write a rule for the sequence, then find the unknown term.

3. 26.1, 23.8, 21.5, _____, 16.9

_____

4. 4.62, 5.03, _____, 5.85, 6.26

_____

Problem Solving • Add and Subtract Money

At the end of April, Mrs. Lei had a balance of $476.05. Since then she has written checks for $263.18 and $37.56, and made a deposit of $368.00. Her checkbook balance currently shows $498.09. Find Mrs. Lei's correct balance.

Read the Problem

What do I need to find?

I need to find Mrs. Lei's correct checkbook balance.

What information do I need to use?

I need to use the April balance, and the check and deposit amounts.

How will I use the information?

I need to make a table and use the information to subtract the checks and add the deposit to find the correct balance.

Solve the Problem

Balancing Mrs. Lei's Checkbook

April balance			$476.05
Deposit		$368.00	+$368.00
			$844.05
Check	$263.18		−$263.18
			$580.87
Check	$37.56		**−$37.56**
			$543.31

Mrs. Lei's correct balance is **$543.31**.

1. At the end of June, Mr. Kent had a balance of $375.98. Since then he has written a check for $38.56 and made a deposit of $408.00. His checkbook shows a balance of $645.42. Find Mr. Kent's correct balance.

2. Jordan buys a notebook for himself and each of 4 friends. Each notebook costs $1.85. Make a table to find the cost of 5 notebooks.

Multiplication with Decimals and Whole Numbers

To find the product of a one-digit whole number and a decimal, multiply as you would multiply whole numbers. To find the number of decimal places in the product, add the number of decimal places in the factors.

To multiply 6 × 4.25, multiply as you would multiply 6 × 425.

Step 1
Multiply the ones.

$$\begin{array}{r} {\scriptstyle 3} \\ 425 \\ \times\ \ 6 \\ \hline 0 \end{array}$$

So, $6 \times 4.25 = \underline{25.50}$

Step 2
Multiply the tens.

$$\begin{array}{r} {\scriptstyle 1\,3} \\ 425 \\ \times\ \ 6 \\ \hline 50 \end{array}$$

Step 3
Multiply the hundreds. Then place the decimal point in the product.

$$\begin{array}{rl} {\scriptstyle 1\ 3} & \\ 4.25 \leftarrow & \textbf{2 decimal places} \\ \times\ \ 6 \leftarrow & + \textbf{0 decimal places} \\ \hline 25.50 \leftarrow & \textbf{2 decimal places} \end{array}$$

Place the decimal point in the product.

1. $\begin{array}{r} 8.23 \\ \times\ \ 6 \\ \hline 49.38 \end{array}$ **Think:** The place value of the decimal factor is hundredths.

2. $\begin{array}{r} 6.3 \\ \times\ \ 4 \\ \hline 252 \end{array}$

3. $\begin{array}{r} 16.82 \\ \times\ \ 5 \\ \hline 8410 \end{array}$

Find the product.

4. $\begin{array}{r} 5.19 \\ \times\ \ 3 \\ \hline \end{array}$

5. $\begin{array}{r} 7.2 \\ \times\ \ 8 \\ \hline \end{array}$

6. $\begin{array}{r} 37.46 \\ \times\ \ 7 \\ \hline \end{array}$

Algebra • Division Patterns with Decimals

To divide a number by 10, 100, or 1,000, use the number of zeros in the divisor to determine how the position of the decimal point changes in the quotient.

	Number of zeros:	Move decimal point:
$147 \div 1 =$ 147	0	0 places to the left
$147 \div 10 =$ 14.7	1	1 place to the left
$147 \div 100 =$ 1.47	2	2 places to the left
$147 \div 1{,}000 =$ 0.147	3	3 places to the left

To divide a number by a power of 10, you can use the exponent to determine how the position of the decimal point changes in the quotient.

	Exponent	Move decimal point:
$97.2 \div 10^0 =$ 97.2	0	0 places to the left
$97.2 \div 10^1 =$ 9.72	1	1 place to the left
$97.2 \div 10^2 =$ 0.972	2	2 places to the left

Complete the pattern.

1. $358 \div 10^0 =$ _____

$358 \div 10^1 =$ _____

$358 \div 10^2 =$ _____

$358 \div 10^3 =$ _____

2. $102 \div 10^0 =$ _____

$102 \div 10^1 =$ _____

$102 \div 10^2 =$ _____

$102 \div 10^3 =$ _____

3. $99.5 \div 1 =$ _____

$99.5 \div 10 =$ _____

$99.5 \div 100 =$ _____

Multiply Decimals

Multiply. 9.3×5.27

Step 1 Multiply as with whole numbers.

$$\begin{array}{r} {\scriptstyle 2\ 6} \\ 2 \\ 527 \\ \times\ \ 93 \\ \hline 1{,}581 \\ +\ 47{,}430 \\ \hline 49{,}011 \end{array}$$

Step 2 Add the number of decimal places in the factors to place the decimal point in the product.

$$\begin{array}{rl} 5.27 \leftarrow & \underline{2} \text{ decimal places} \\ \times\ 9.3 \leftarrow + & \underline{1} \text{ decimal place} \\ \hline 1{,}581 & \\ +\ 47{,}430 & \\ \hline 49{,}011 \leftarrow & \underline{3} \text{ decimal places} \end{array}$$

So, $9.3 \times 5.27 = \underline{49.011}$.

Place the decimal point in the product.

1. $\begin{array}{r} 1.6 \\ \times\ 0.7 \\ \hline 112 \end{array}$

2. $\begin{array}{r} 14.2 \\ \times\ 7.6 \\ \hline 10792 \end{array}$

3. $\begin{array}{r} 3.59 \\ \times\ 4.8 \\ \hline 17232 \end{array}$

Find the product.

4. $\begin{array}{r} 5.7 \\ \times\ 0.8 \end{array}$

5. $\begin{array}{r} 35.1 \\ \times\ 8.4 \end{array}$

6. $\begin{array}{r} 2.19 \\ \times\ 6.3 \end{array}$

Divide Decimals

You can multiply the dividend and the divisor by the same power of 10 to make the divisor a whole number. As long as you multiply both the dividend and the divisor by the same power of 10, the quotient stays the same.

Example 1: Divide. 0.84 ÷ 0.07

Multiply the dividend, **0.84**, and the divisor, **0.07**, by the power of 10 that makes the **divisor** a whole number.

Since 84 ÷ 7 = 12, you know that 0.84 ÷ 0.07 = **12**.

0.84 ÷ 0.07 = ?

× 100 × 100

84 ÷ **7** = 12

Example 2: Divide. 4.42 ÷ 3.4

Multiply both the dividend and the divisor by 10 to make the divisor a whole number.

$3.4\overline{)4.42}$ —— Multiply 3.4 and 4.42 both by 10 ⟶ $34\overline{)44.2}$

Divide as you would whole numbers. Place the decimal point in the quotient, above the decimal point in the dividend.

So, 4.42 ÷ 3.4 = **1.3**.

$$\begin{array}{r} 1.3 \\ 34\overline{)44.2} \\ -\ 34 \\ \hline 102 \\ -\ 102 \\ \hline 0 \end{array}$$

Copy and complete the pattern.

1. 54 ÷ 6 = _____

5.4 ÷ _____ = 9

_____ ÷ 0.06 = 9

2. 184 ÷ 23 = _____

18.4 ÷ _____ = 8

_____ ÷ 0.23 = 8

3. 138 ÷ 2 = _____

13.8 ÷ _____ = 69

_____ ÷ 0.02 = 69

Divide.

4. $1.4\overline{)9.8}$

5. $0.3\overline{)0.6}$

6. 3.64 ÷ 1.3

Common Denominators and Equivalent Fractions

You can find a common denominator of two fractions.

A **common denominator** of two fractions is a common multiple of their denominators.

Find a common denominator of $\frac{1}{6}$ and $\frac{7}{10}$. Rewrite the pair of fractions using a common denominator.

Step 1 Identify the denominators.
The denominators are 6 and 10.

Step 2 List the multiples of the greater denominator, 10.
Multiples of 10: 10, 20, 30, 40, 50, 60, ...

Step 3 Check if any of the multiples of the greater denominator are evenly divisible by the other denominator.

Both 30 and 60 are evenly divisible by 6.
Common denominators of $\frac{1}{6}$ and $\frac{7}{10}$ are 30 and 60.

Step 4 Rewrite the fractions with a denominator of 30.
Multiply the numerator and the denominator of each fraction by the same number so that the denominator results in 30.

$$\frac{1}{6} = \frac{1 \times 5}{6 \times 5} = \frac{5}{30} \quad \frac{7}{10} = \frac{7 \times 3}{10 \times 3} = \frac{21}{30}$$

Use a common denominator to write an equivalent fraction for each fraction.

1. $\frac{5}{12}, \frac{2}{9}$
common denominator: _____

_____

2. $\frac{3}{8}, \frac{5}{6}$
common denominator: _____

_____

3. $\frac{2}{9}, \frac{1}{6}$
common denominator: _____

_____

4. $\frac{3}{4}, \frac{9}{10}$
common denominator: _____

_____

Add and Subtract Fractions

To add or subtract fractions with unlike denominators, you need to rename them as fractions with like denominators. You can do this by making a list of equivalent fractions.

Add. $\frac{5}{12} + \frac{1}{8}$

Step 1 Write equivalent fractions for $\frac{5}{12}$. $\frac{5}{12}, \frac{10}{24}, \frac{15}{36}, \frac{20}{48}$

Step 2 Write equivalent fractions for $\frac{1}{8}$. $\frac{1}{8}, \frac{2}{16}, \frac{3}{24}$

Step 3 Rewrite the problem using the equivalent fractions. Then add.

Stop when you find two fractions with the same denominator.

$\frac{5}{12} + \frac{1}{8}$ becomes $\frac{10}{24} + \frac{3}{24} = \frac{13}{24}$.

Subtract. $\frac{9}{10} - \frac{1}{2}$

Step 1 Write equivalent fractions for $\frac{9}{10}$. $\frac{9}{10}, \frac{18}{20}, \frac{27}{30}, \frac{36}{40}$

Step 2 Write equivalent fractions for $\frac{1}{2}$. $\frac{1}{2}, \frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}$

Step 3 Rewrite the problem using the equivalent fractions. Then subtract.

$\frac{9}{10} - \frac{1}{2}$ becomes $\frac{9}{10} - \frac{5}{10} = \frac{4}{10}$. Written in simplest form, $\frac{4}{10} = \frac{2}{5}$.

Find the sum or difference. Write your answer in simplest form.

1. $\frac{2}{9} + \frac{1}{3}$ _____

2. $\frac{1}{2} + \frac{2}{5}$ _____

3. $\frac{1}{4} + \frac{1}{6}$ _____

4. $\frac{1}{5} + \frac{3}{4}$ _____

5. $\frac{7}{8} - \frac{1}{4}$ _____

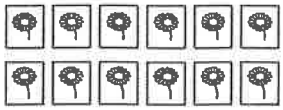
6. $\frac{3}{4} - \frac{2}{3}$ _____

7. $\frac{9}{10} - \frac{4}{5}$ _____

8. $\frac{8}{9} - \frac{5}{6}$ _____

Find Part of a Group

Lauren bought 12 stamps for postcards. She gave Brianna $\frac{1}{6}$ of them. How many stamps did Lauren give to Brianna?



Find $\frac{1}{6}$ of 12.

Step 1 What is the denominator in the fraction of the stamps Lauren gave to Brianna? **6**
So, divide the 12 stamps into 6 equal groups. Circle the groups.

Step 2 Each group represents $\frac{1}{6}$ of the stamps.

How many stamps are in 1 group? **2**

So, $\frac{1}{6}$ of 12 is **2**, or $\frac{1}{6} \times 12$ is **2**.

So, Lauren gave Brianna **2** stamps.

Use a model to solve.

1. $\frac{3}{4} \times 12 =$ _____

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

3. $\frac{3}{5} \times 20 =$ _____

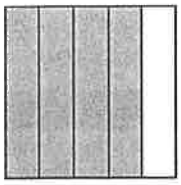
4. $\frac{4}{6} \times 18 =$ _____

Multiply Fractions

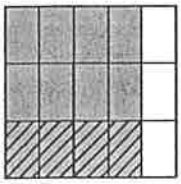
You can use a model to help you multiply two fractions.

Multiply. $\frac{1}{3} \times \frac{4}{5}$

Step 1 Draw a rectangle. Divide it into 5 equal columns. To represent the factor $\frac{4}{5}$, shade 4 of the 5 columns.



Step 2 Now divide the rectangle into 3 equal rows. Shade $\frac{1}{3}$ of the $\frac{4}{5}$ you already shaded.



The rectangle is divided into **15** smaller rectangles. This is the denominator of the product.

There are 4 smaller rectangles that contain both types of shading. So, **4** is the numerator of the product.

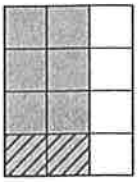
So $\frac{4}{15}$ of the rectangles contain both types of shading.

Think: What is $\frac{1}{3}$ of $\frac{4}{5}$?

$\frac{1}{3} \times \frac{4}{5} = \underline{\frac{4}{15}}$.

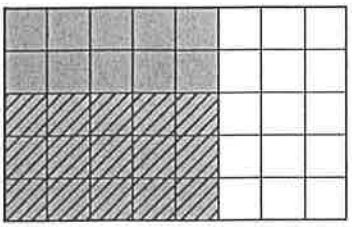
Find the product. Draw a model.

1.



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

2.



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

3.

$\frac{2}{5} \times \frac{3}{4} =$ _____

4.

$\frac{2}{3} \times \frac{3}{8} =$ _____

Fraction Multiplication

To multiply fractions, you can multiply the numerators, then multiply the denominators. Write the product in simplest form.

Multiply. $\frac{3}{10} \times \frac{4}{5}$

Step 1 Multiply the numerators. Multiply the denominators.

$$\frac{3}{10} \times \frac{4}{5} = \frac{3 \times 4}{10 \times 5}$$

$$= \frac{\mathbf{12}}{\mathbf{50}}$$

Step 2 Write the product in simplest form.

$$\frac{12}{50} = \frac{12 \div 2}{50 \div 2}$$

$$= \frac{\mathbf{6}}{\mathbf{25}}$$

So, $\frac{3}{10} \times \frac{4}{5}$ is $\frac{\mathbf{6}}{\mathbf{25}}$.

Find the product. Write the product in simplest form.

1. $\frac{3}{4} \times \frac{1}{5}$ _____

2. $\frac{4}{7} \times \frac{5}{12}$ _____

3. $\frac{3}{8} \times \frac{2}{9}$ _____

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

5. $\frac{1}{3} \times 4$ _____

6. $\frac{3}{4} \times 8$ _____

7. $\frac{5}{8} \times \frac{2}{3}$ _____

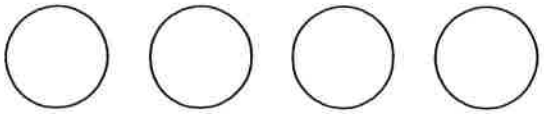
8. $\frac{5}{6} \times \frac{3}{8}$ _____

Fraction and Whole-Number Division

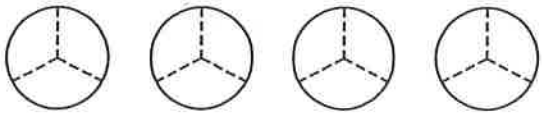
You can divide fractions by solving a related multiplication sentence.

Divide. $4 \div \frac{1}{3}$

Step 1 Draw 4 circles to represent the dividend, 4.



Step 2 Since the divisor is $\frac{1}{3}$, divide each circle into thirds.



Step 3 Count the total number of thirds.

When you divide the 4 circles into thirds, you are finding the number of thirds in 4 circles, or finding 4 groups of 3.

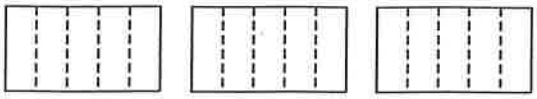
There are 12 thirds.

Step 4 Complete the number sentence.

$4 \div \frac{1}{3} = 4 \times 3 = 12$

Use the model to complete the number sentence.

1.



$3 \div \frac{1}{5} = 3 \times \_\_\_\_ = \_\_\_\_$

2.

$\frac{1}{4} \div 2 = \frac{1}{4} \times \_\_\_\_ = \_\_\_\_$

Write a related multiplication sentence to solve.

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

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

5. $\frac{1}{6} \div 2$ _____

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

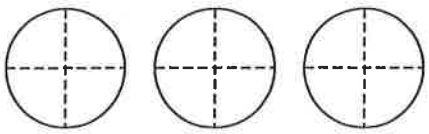
Interpret Division with Fractions

You can draw a diagram or write an equation to represent division with fractions.

Beatriz has 3 cups of applesauce. She divides the applesauce into $\frac{1}{4}$-cup servings. How many servings of applesauce does she have?

One Way Draw a diagram to solve the problem.

Draw 3 circles to represent the 3 cups of applesauce. Since Beatriz divides the applesauce into $\frac{1}{4}$-cup servings, draw lines to divide each "cup" into fourths.



To find $3 \div \frac{1}{4}$, count the total number of fourths in the 3 circles.

So, Beatriz has 12 one-fourth-cup servings of applesauce.

Another Way Write an equation to solve.

Write an equation. $3 \div \frac{1}{4} = n$

Write a related multiplication equation. $3 \times 4 = n$

Then solve. $12 = n$

So, Beatriz has 12 one-fourth-cup servings of applesauce.

1. Draw a diagram to represent the problem. Then solve.

Drew has 5 granola bars. He cuts the bars into halves. How many $\frac{1}{2}$-bar pieces does he have?

2. Write an equation to represent the problem. Then solve.

Three friends share $\frac{1}{4}$ pan of brownies. What fraction of the whole pan of brownies does each friend get?

Ordered Pairs

A coordinate grid is like a sheet of graph paper bordered at the left and at the bottom by two perpendicular number lines. The **x-axis** is the horizontal number line at the bottom of the grid. The **y-axis** is the vertical number line on the left side of the grid.

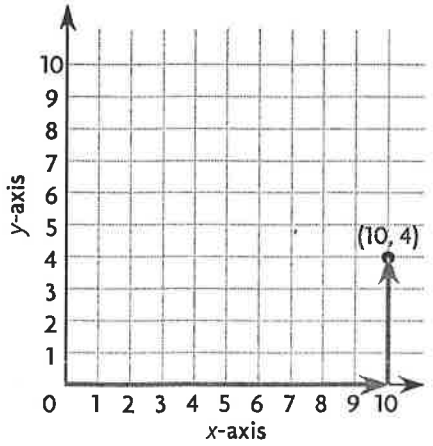
An ordered pair is a pair of numbers that describes the location of a point on the grid. An ordered pair contains two coordinates, *x* and *y*. The **x-coordinate** is the first number in the ordered pair, and the **y-coordinate** is the second number.

$(x, y) \longrightarrow (10, 4)$

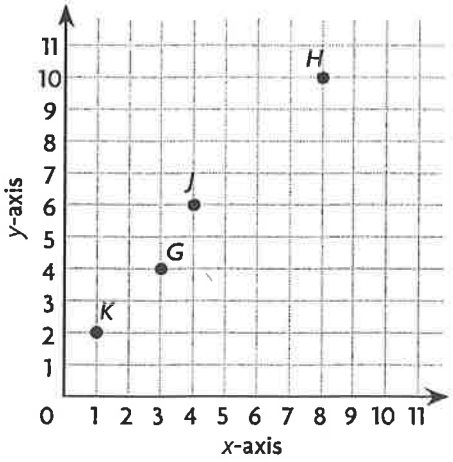
Plot and label (10, 4) on the coordinate grid.

To graph an ordered pair:

- Start at the origin, (0, 0).
- Think: The letter *x* comes before *y* in the alphabet. Move across the *x*-axis first.
- The *x*-coordinate is 10, so move 10 units right.
- The *y*-coordinate is 4, so move 4 units up.
- Plot and label the ordered pair (10, 4).



Use the coordinate grid to write an ordered pair for the given point.



1. *G* _____ **2.** *H* _____

3. *J* _____ **4.** *K* _____

Plot and label the points on the coordinate grid.

5. *A* (1, 6) **6.** *B* (1, 9)

7. *C* (3, 7) **8.** *D* (5, 5)

9. *E* (9, 3) **10.** *F* (6, 2)

Graph Data

Graph the data on the coordinate grid.

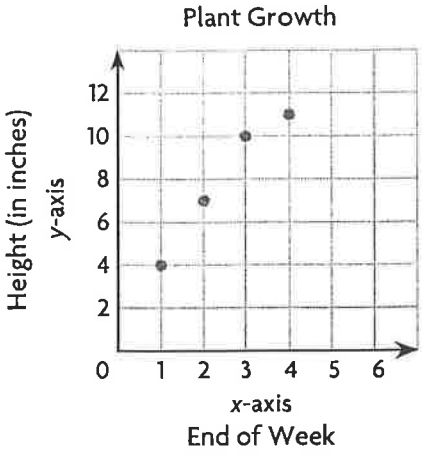
Plant Growth				
End of Week	1	2	3	4
Height (in inches)	4	7	10	11

- Choose a title for your graph and label it. You can use the data categories to name the *x*- and *y*-axis.
- Write the related pairs of data as ordered pairs.

(1, 4), (2, 7)

(3, 10), (4, 11)

- Plot the point for each ordered pair.



Graph the data on the coordinate grid. Label the points.

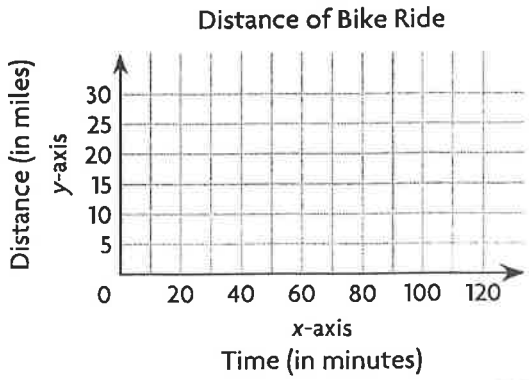
1.

Distance of Bike Ride				
Time (in minutes)	30	60	90	120
Distance (in miles)	9	16	21	27

Write the ordered pair for each point.

(____, ____), (____, ____)

(____, ____), (____, ____)



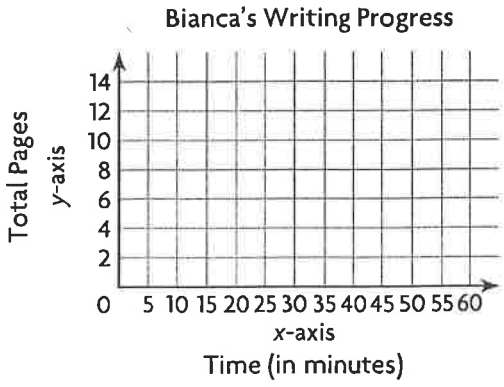
2.

Bianca's Writing Progress				
Time (in minutes)	15	30	45	60
Total Pages	1	3	9	11

Write the ordered pair for each point.

(____, ____), (____, ____)

(____, ____), (____, ____)



Graph and Analyze Relationships

The scale on a map is 1 in. = 4 mi. Two cities are 5 inches apart on the map. What is the actual distance between the two cities?

Step 1 Make a table that relates the map distances to the actual distances.

Map Distance (in.)	1	2	3	4	5
Actual Distance (mi)	4	8	12	16	?

Step 2 Write the number pairs in the table as ordered pairs.

(1, 4), (2, 8), (3, 12), (4, 16), (5, ?)

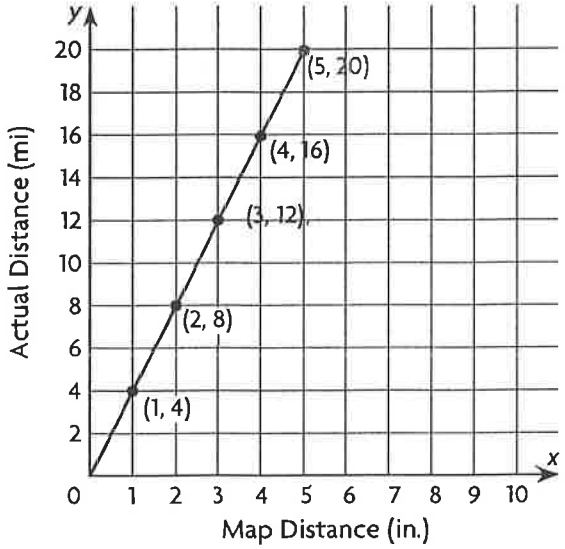
Step 3 Graph the ordered pairs. Connect the points with a line from the origin.

Possible rule: Multiply the map distance by 4 to get the actual distance.

Step 4 Use the rule to find the actual distance between the two cities.

So, two cities that are 5 inches apart on the map are actually 5 × 4, or 20 miles apart.

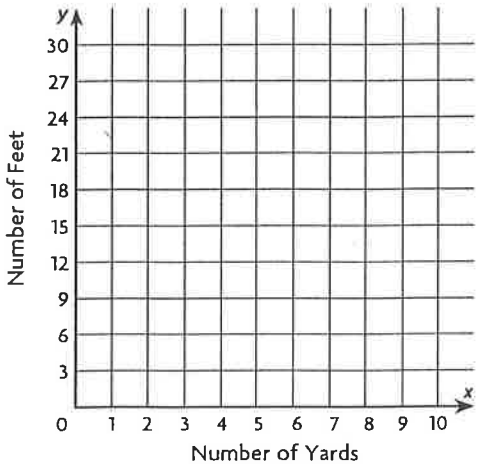
Plot the point (5, 20) on the graph.



Graph and label the related number pairs as ordered pairs. Then complete and use the rule to find the unknown term.

1. Multiply the number of yards by _____ to find the number of feet.

Number of Yards	1	2	3	4	5
Number of Feet	3	6	9	12	



Customary Length

You can convert one customary unit of length to another customary unit of length by multiplying or dividing.

Multiply to change from larger to smaller units of length.

Divide to change from smaller to larger units of length.

Customary Units of Length

1 foot (ft) = 12 inches (in.)
1 yard (yd) = 3 feet
1 mile (mi) = 5,280 feet
1 mile = 1,760 yards

Convert 3 feet to inches.

Step 1
Decide:
(Multiply) or Divide

feet → inches
larger → smaller

Step 2
Think:

1 ft = 12 in., so
3 ft = (3 × 12) in.

Step 3
Multiply.
3 × 12 = 36

So, 3 feet = 36 inches.

Convert 363 feet to yards.

Step 1
Decide:
Multiply or (Divide)

feet → yards
smaller → larger

Step 2
Think:

3 ft = 1 yd,
so 363 ft = (363 ÷ 3) yd.

Step 3
Divide.
363 ÷ 3 = 121

So, 363 feet = 121 yards.

Convert.

1. 33 yd = _____ ft **2.** 300 mi = _____ yd **3.** 46 in. = ____ ft ____ in.

4. 96 yd = _____ ft **5.** 48 ft = _____ yd **6.** 2 mi 20 yd = _____ yd

Compare. Write <, >, or =.

7. 2 yd ◯ 7 ft **8.** 67 mi ◯ 117,920 yd **9.** 250 yd ◯ 800 ft

10. 14 yd 2 ft ◯ 16 ft **11.** 34 ft 10 in. ◯ 518 in. **12.** 5 mi 8 ft ◯ 8,800 yd

Customary Capacity

You can convert one unit of customary capacity to another by multiplying or dividing.

Multiply to change from larger to smaller units.

Divide to change from smaller to larger units.

Customary Units of Capacity

1 cup (c) = 8 fluid ounces (fl oz)
1 pint (pt) = 2 cups
1 quart (qt) = 2 pints
1 quart = 4 cups
1 gallon (gal) = 4 quarts

Convert 8 cups to quarts.

Step 1
Decide:
Multiply or (Divide)

cups → quarts
smaller → larger

Step 2
Think:

4 c = 1 qt,
so 8 c = (8 ÷ 4) qt.

Step 3
Divide.

8 ÷ 4 = 2

So, 8 cups = 2 quarts.

Convert 19 gallons to quarts.

Step 1
Decide:
(Multiply) or Divide

gallons → quarts
larger → smaller

Step 2
Think:

1 gal = 4 qt,
so 19 gal = (19 × 4) qt.

Step 3
Multiply.

19 × 4 = 76

So, 19 gallons = 76 quarts.

Convert.

1. 14 pt = _____ qt **2.** 32 qt = _____ c **3.** 7 c = _____ fl oz

4. 28 c = _____ pt **5.** 9 gal = _____ qt **6.** 16 c = _____ qt

Compare. Write <, >, or =.

7. 16 qt ◯ 60 c **8.** 88 fl oz ◯ 11 c **9.** 3 gal ◯ 10 qt

10. 36 qt ◯ 54 c **11.** 66 fl oz ◯ 9 c **12.** 16 gal ◯ 64 qt

You can convert one customary unit of weight to another by multiplying or dividing.

Multiply to change from larger to smaller units.

Divide to change from smaller to larger units.

Customary Units of Weight

1 pound (lb) = 16 ounces (oz)
1 ton (T) = 2,000 pounds

Convert 96 ounces to pounds.

Step 1
Decide:
Multiply or (Divide)

ounces → pounds
smaller → larger

Step 2
Think:

16 oz = 1 lb
so 96 oz = (96 ÷ 16) lb.

Step 3
Divide.

96 ÷ 16 = 6

So, 96 ounces = 6 pounds.

Convert 4 pounds to ounces.

Step 1
Decide:
(Multiply) or Divide

pounds → ounces
larger → smaller

Step 2
Think:

1 lb = 16 oz,
so 4 lb = (4 × 16) oz.

Step 3
Multiply.

4 × 16 = 64

So, 4 pounds = 64 ounces.

Convert.

1. 14 lb = _____ oz

2. 12,000 lb = _____ T

3. 2 T = _____ lb

4. 7 lb = _____ oz

5. 22 lb = _____ oz

6. 16 oz = _____ lb

Compare. Write <, >, or =.

7. 1 T ◯ 3,000 lb

8. 3 lb ◯ 43 oz

9. 5 T ◯ 10,000 lb

10. 3 T ◯ 6,000 lb

11. 6 lb ◯ 96 oz

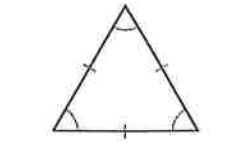
12. 16 T ◯ 6,400 lb

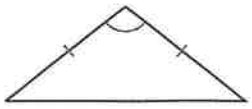
Triangles

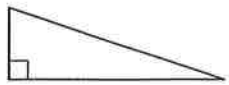
You can classify triangles by the length of their sides and by the measure of their angles. **Classify each triangle.**

Use a ruler to measure the side lengths.

- **equilateral triangle**
  All sides are the same length.
- **isosceles triangle**
  Two sides are the same length.
- **scalene triangle**
  All sides are different lengths.





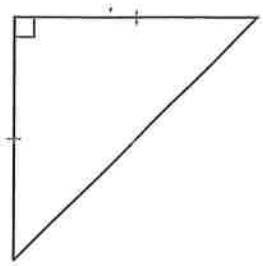


Use the corner of a sheet of paper to classify the angles.

- **acute triangle**
  All three angles are acute.
- **obtuse triangle**
  One angle is obtuse. The other two angles are acute.
- **right triangle**
  One angle is right. The other two angles are acute.

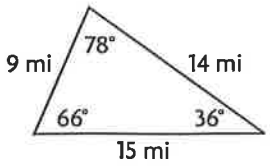
Classify the triangle according to its side lengths.
It has two congruent sides.
The triangle is an isosceles triangle.

Classify the triangle according to its angle measures.
It has one right angle.
The triangle is a right triangle.



Classify each triangle. Write *isosceles*, *scalene*, or *equilateral*. Then write *acute*, *obtuse*, or *right*.

1.



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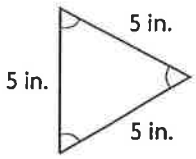

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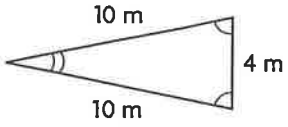

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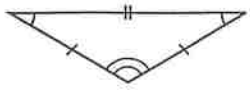

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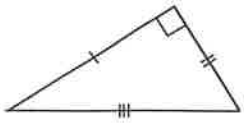
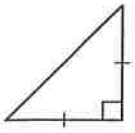
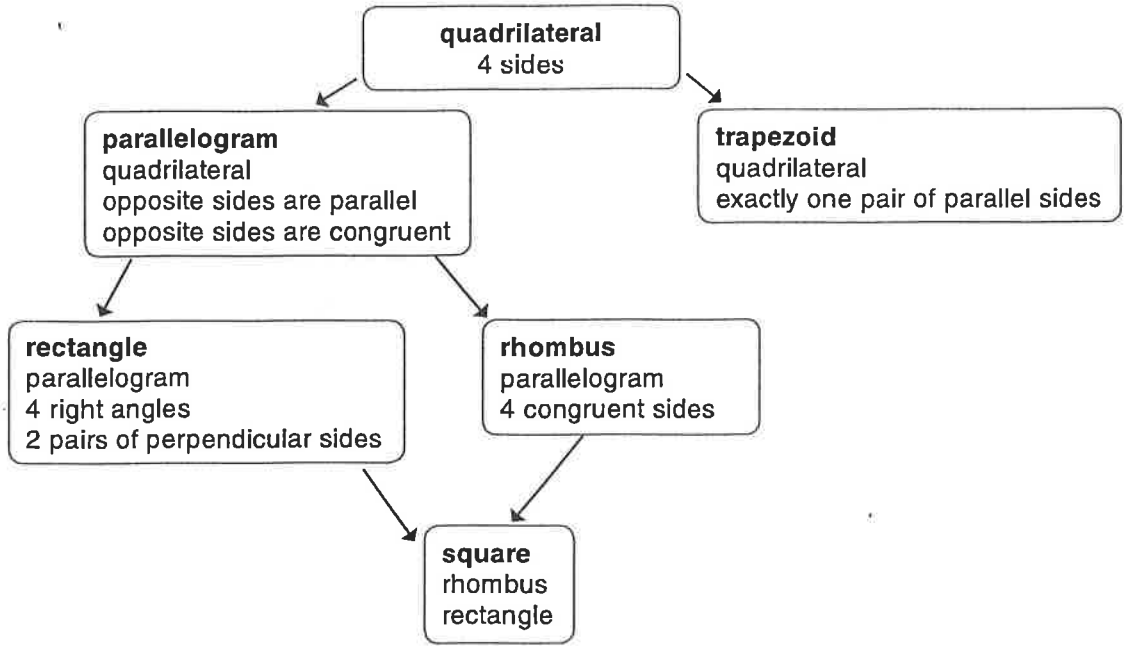


6.

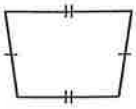


Quadrilaterals

You can use this chart to help you classify quadrilaterals.



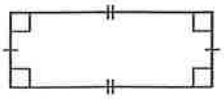
Classify the figure.

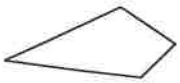


The figure has 4 sides, so it is a *quadrilateral*. The figure has exactly one pair of parallel sides, so it is a *trapezoid*.

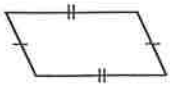
quadrilateral, trapezoid

Classify the quadrilateral in as many ways as possible. Write *quadrilateral*, *parallelogram*, *rectangle*, *rhombus*, *square*, or *trapezoid*.

1. 

2. 

3. 

4. 

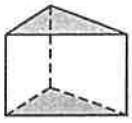
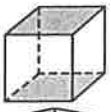
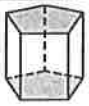
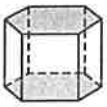
Three-Dimensional Figures

A **polyhedron** is a solid figure with faces that are polygons.
You can identify a polyhedron by the shape of its faces.

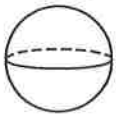
A **pyramid** is a polyhedron with one polygon base. The lateral faces of a pyramid are triangles that meet at a common vertex.

triangular pyramid	The base and faces are triangles.	
rectangular pyramid	The base is a rectangle.	
square pyramid	The base is a square.	
pentagonal pyramid	The base is a pentagon.	
hexagonal pyramid	The base is a hexagon.	

A **prism** is a polyhedron with two congruent polygons as bases. The lateral faces of a prism are rectangles.

triangular prism	The two bases are triangles.	
rectangular prism	All faces are rectangles.	
square prism or cube	All faces are squares.	
pentagonal prism	The two bases are pentagons.	
hexagonal prism	The two bases are hexagons.	

A solid figure with curved surfaces is **not a polyhedron**.

cone	The one base is a circle.	
sphere	There is no base.	
cylinder	The two bases are circles.	

Classify the solid figure. Write *prism, pyramid, cone, cylinder,* or *sphere*.

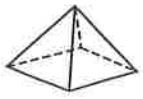
The solid figure has one base.

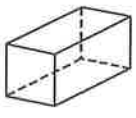
The rest of its faces are triangles.

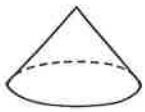
So, the solid figure is a pyramid.

Classify each solid figure. Write *prism, pyramid, cone, cylinder,* or *sphere*.

1. 

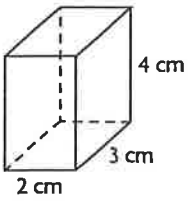
2. 

3. 

4. 

Volume of Rectangular Prisms

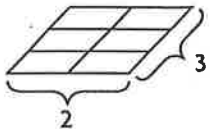
Jorge wants to find the volume of this rectangular prism. He can use cubes that measure 1 centimeter on each side to find the volume.



Step 1 The base has a length of 2 centimeters and a width of 3 centimeters. Multiply to find the area of the base.

Base = 2 × 3

Base = 6 cm²



Step 2 The height of the prism is 4 centimeters. Add the number of cubes in each layer to find the volume.

Remember: Each layer has 6 cubes.

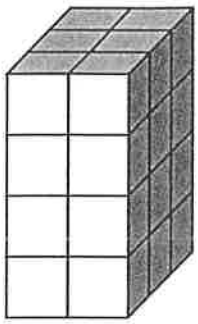
Step 3 Count the cubes. 24 cubes

Multiply the base and the height to check your answer.

Volume = 6 × 4

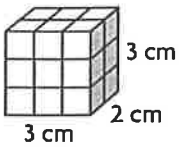
Volume = 24 cubic centimeters

So, the volume of Jorge's rectangular prism is 24 cubic centimeters.



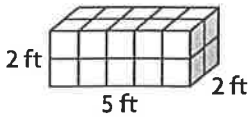
Find the volume.

1.



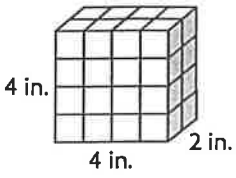
Volume: _____

2.



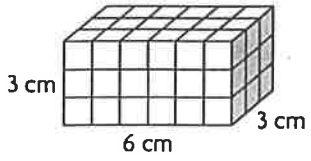
Volume: _____

3.



Volume: _____

4.

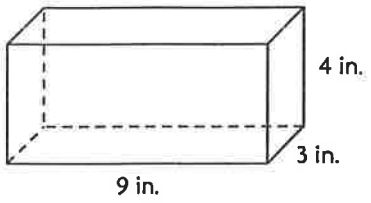


Volume: _____

You can use a formula to find the volume of a rectangular prism.

$$Volume = length \times width \times height$$
$$V = (l \times w) \times h$$

Find the volume of the rectangular prism.



Step 1 Identify the length, width, and height of the rectangular prism.

length = 9 in. width = 3 in. height = 4 in.

Step 2 Substitute the values of the length, width, and height into the formula.

$V = (l \times w) \times h$
$V = (\ 9\ \times\ 3\ ) \times\ 4$

Step 3 Multiply the length by the width.

$V = (9 \times 3) \times 4$
$V = 27 \times 4$

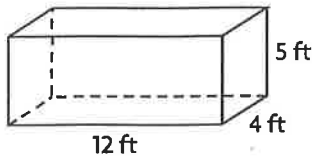
Step 4 Multiply the product of the length and width by the height.

$V = 27 \times 4$
$= 108$

So, the volume of the rectangular prism is 108 cubic inches.

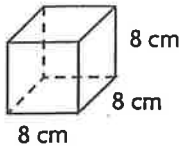
Find the volume.

1.



$V =$ _____

2.



$V =$ _____