Materials:
- Student directions (one for each group)
  - Group 1 (cylinder)
  - Group 2 (rectangular pyramid)
  - Group 3 (rectangular prism)
  - Group 4 (hexagonal pyramid)
  - Group 5 (triangular pyramid)
  - Group 6 (pentagonal prism)
  - Group 7 (triangular prism)
  - Group 8 (cone)
- Review cards (Fold each card vertically so the crease is on the right. Then fold each card horizontally so the crease is on the top.)
  - 8 sets (one for each group)
  - 2 decoy sets
- Solution I (the last solution, which is the same for all groups)
- Lined paper
- Calculators

Directions:
Divide the students into 8 groups. The students will work in these groups to solve 9 problems. As the students work, be sure each student shows all work on lined paper. The first question is on the directions page. From there, the students are able to find the next card based on the answer. Once they have checked their answer, they can solve the next problem. The solid assigned to each group from the directions page will appear on each solution for that group. In each group, there should be a time keeper, messenger and a researcher. The time keeper watches the clock to make sure the group finishes the problem within the time given on the card. It is also their job to keep the group on task. The messenger is responsible for retrieving the next card and checking the group’s solution on the card. Each student is responsible for showing all work on lined paper. The researcher is responsible for looking up how to solve the problem if the students cannot figure it out as a group. The activity is complete when each group has completed all questions correctly. If the students solve the problems within the time limit given on each card, this activity should take about 30 minutes.
Objectives:

This is a back-to-school review game. Use it before you start the Blue Book.

The student will

• identify a given solid.
• construct a stem-and-leaf plot.
• write and solve a proportion.
• evaluate an expression involving exponents and absolute value.
• write and solve a two-step equation.
• graph two points and find the slope of the line.
• write and simplify an expression involving fractions.
• convert between systems of measurement and calculate the surface area of a solid.
• graph figures in a coordinate plane and determine which two figures are similar.
Scavenger Hunt
Student Directions
Group 1

Materials:
• Lined paper
• Review cards
• Calculators

Directions:
Decide who in the group will be the researcher, timekeeper, and messenger. There are Key Ideas on the back of each card, but if your group gets stuck, the researcher is responsible for looking in a book to help your group find the solution. The timekeeper makes sure that your group finds the solution in the time limit given. Once each group member has shown all work on the lined paper, and arrived at the same solution, the messenger retrieves the next card by using your group’s solution. Once you have completed all the cards, your group is finished!

Start by solving the problem below.

Sketch a cylinder.
Scavenger Hunt
Student Directions

Materials:
- Lined paper
- Review cards
- Calculators

Directions:
Decide who in the group will be the researcher, timekeeper, and messenger. There are Key Ideas on the back of each card, but if your group gets stuck, the researcher is responsible for looking in a book to help your group find the solution. The timekeeper makes sure that your group finds the solution in the time limit given. Once each group member has shown all work on the lined paper, and arrived at the same solution, the messenger retrieves the next card by using your group’s solution. Once you have completed all the cards, your group is finished!

Start by solving the problem below.

A Sketch a rectangular pyramid.

1 min

Your first card will look like this.
Scavenger Hunt
Student Directions
Group 3

Materials:
• Lined paper
• Review cards
• Calculators

Directions:
Decide who in the group will be the researcher, timekeeper, and messenger. There are Key Ideas on the back of each card, but if your group gets stuck, the researcher is responsible for looking in a book to help your group find the solution. The timekeeper makes sure that your group finds the solution in the time limit given. Once each group member has shown all work on the lined paper, and arrived at the same solution, the messenger retrieves the next card by using your group’s solution. Once you have completed all the cards, your group is finished!

Start by solving the problem below.

Sketch a rectangular prism.

Your first card will look like this.

“Name these shapes.”
Materials:
- Lined paper
- Review cards
- Calculators

Directions:
Decide who in the group will be the researcher, timekeeper, and messenger. There are Key Ideas on the back of each card, but if your group gets stuck, the researcher is responsible for looking in a book to help your group find the solution. The timekeeper makes sure that your group finds the solution in the time limit given. Once each group member has shown all work on the lined paper, and arrived at the same solution, the messenger retrieves the next card by using your group’s solution. Once you have completed all the cards, your group is finished!

Start by solving the problem below.

Sketch a hexagonal pyramid.

Your first card will look like this.
Student Directions

Scavenger Hunt

Group 5

Materials:
- Lined paper
- Review cards
- Calculators

Directions:
Decide who in the group will be the researcher, timekeeper, and messenger. There are Key Ideas on the back of each card, but if your group gets stuck, the researcher is responsible for looking in a book to help your group find the solution. The timekeeper makes sure that your group finds the solution in the time limit given. Once each group member has shown all work on the lined paper, and arrived at the same solution, the messenger retrieves the next card by using your group’s solution. Once you have completed all the cards, your group is finished!

Start by solving the problem below.

A Sketch a triangular pyramid.

1 min Your first card will look like this.

“Name these shapes.”
Materials:
- Lined paper
- Review cards
- Calculators

Directions:
Decide who in the group will be the researcher, timekeeper, and messenger. There are Key Ideas on the back of each card, but if your group gets stuck, the researcher is responsible for looking in a book to help your group find the solution. The timekeeper makes sure that your group finds the solution in the time limit given. Once each group member has shown all work on the lined paper, and arrived at the same solution, the messenger retrieves the next card by using your group’s solution. Once you have completed all the cards, your group is finished!

Start by solving the problem below.

Sketch a pentagonal prism.

Your first card will look like this.
Scavenger Hunt
Student Directions
Group 7

Materials:
• Lined paper
• Review cards
• Calculators

Directions:
Decide who in the group will be the researcher, timekeeper, and messenger. There are Key Ideas on the back of each card, but if your group gets stuck, the researcher is responsible for looking in a book to help your group find the solution. The timekeeper makes sure that your group finds the solution in the time limit given. Once each group member has shown all work on the lined paper, and arrived at the same solution, the messenger retrieves the next card by using your group’s solution. Once you have completed all the cards, your group is finished!

Start by solving the problem below.

A Sketch a triangular prism.

1 min

Your first card will look like this.

"Name these shapes."
Scavenger Hunt
Student Directions

Group 8

Materials:
- Lined paper
- Review cards
- Calculators

Directions:
Decide who in the group will be the researcher, timekeeper, and messenger. There are Key Ideas on the back of each card, but if your group gets stuck, the researcher is responsible for looking in a book to help your group find the solution. The timekeeper makes sure that your group finds the solution in the time limit given. Once each group member has shown all work on the lined paper, and arrived at the same solution, the messenger retrieves the next card by using your group’s solution. Once you have completed all the cards, your group is finished!

Start by solving the problem below.

Sketch a cone.

Your first card will look like this.

“Name these shapes.”
A cylinder is a solid that has two parallel, congruent circular bases. So, the solid shown is a cylinder.

Key Idea

A stem-and-leaf plot uses the digits of data values to organize a data set. Each data value is broken into a stem (digit or digits on the left) and a leaf (digit or digits on the right).

Make a stem-and-leaf plot of the number of songs downloaded.

<table>
<thead>
<tr>
<th>Songs Downloaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
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<tr>
<td>12</td>
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<td>16</td>
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<td>18</td>
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<td>31</td>
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<tr>
<td>34</td>
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<tr>
<td>45</td>
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<tr>
<td>5</td>
</tr>
</tbody>
</table>

Reminder

Your next card will look like this.

Each card for your group should have this solid. If you do not see a cylinder, go back and try again. Each card for your group should have a stem-and-leaf plot of the number of songs downloaded.
To make a stem-and-leaf plot:
1.) Order the data.
2.) Choose the stems and the leaves. Because the data values range from 5 to 45, use the tens digits for the stems and the ones digits for the leaves.
3.) Write the stems to the left of the vertical line.
4.) Write the leaves for each stem to the right of the vertical line.
5.) Create a title and a key.

<table>
<thead>
<tr>
<th>Stem</th>
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</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5 9</td>
</tr>
<tr>
<td>1</td>
<td>2 4 6 8</td>
</tr>
<tr>
<td>2</td>
<td>0 0 5</td>
</tr>
<tr>
<td>3</td>
<td>1 4</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Key: 1 4 = 14 songs

It costs $37.50 for 5 tickets to the movies.

Write and solve a proportion to determine how much 8 tickets cost.
Solution:
Write and solve a proportion.

\[
\frac{3}{8} = \frac{x}{5}
\]

Cross Products Property

Multiply.

\[
30 = 5x
\]

Divide.

\[
x = \frac{30}{5} = 6
\]

It costs $60 for 8 tickets to the movies.

Key Idea
Use the order of operations when evaluating an expression.

Reminder
Evaluating an expression when

\[
x = -3 \text{ and } y = 1
\]

Evaluate the expression

\[
\frac{x}{y} - 2 | + \frac{12}{x}
\]
The perimeter of the trapezoid is 40. What is the value of \( x \)?

Your next card will look like this.

Key Ideas

- Reminder
- \( x \) and \( 1 \) for \( x \) and \( y \), then simplify.

Solution:

\[
\begin{align*}
4 &= (4 - 3) + 1 - 3 \\
&= (4 - 3) + 1 - 3 \\
&= 4 - 3 + 1 \\
&= 2 \\
&= (x - 2) + \sqrt{4 - 3} \\
&= x - 2 + 1 \\
&= x - 1
\end{align*}
\]
Given that the total perimeter is 40 units, and one side is 5 units longer than another side, let's denote the shorter side as $x$. Therefore, the equation to find the value of $x$ is:

$$40 = (x + 5) + (x + 5) + 5 + 5$$

Simplifying the equation:

$$40 = 2x + 10 + 5 + 5$$

$$40 = 2x + 20$$

Subtracting 20 from both sides:

$$20 = 2x$$

Dividing both sides by 2:

$$x = 10$$

The value of $x$ is 10.

**Solution:**

The perimeter $P$ is equal to the sum of the side lengths.

$$P = 2x + 10 + 5 + 5$$

Substitute $x = 10$:

$$P = 2(10) + 20$$

$$P = 40$$

To graph the line that passes through the two points $(-2, 2)$ and $(4, 6)$, first find the slope of the line. The slope $m$ is given by the formula:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Substitute the given points:

$$m = \frac{6 - 2}{4 - (-2)}$$

$$m = \frac{4}{6}$$

$$m = \frac{2}{3}$$

The slope of the line is $\frac{2}{3}$.

**Key Ideas**

- **Reminder:**
  - **Ordered Pair** $(x, y)$ is a pair of numbers that is used to locate a point in a coordinate plane.
  - **Slope** is the rate of change between any two points on a line.
  - To find the slope of a line, find the ratio of the vertical change to the horizontal change.

To graph the line that passes through the two points $(-2, 2)$ and $(4, 6)$, use the calculated slope to plot the line.
Your next card will look like this.

Solution:

What is the difference of 1 2\frac{1}{3} and \(-3\frac{2}{5}\)?

Key Ideas

- To subtract a rational number, add its opposite.
- To add rational numbers, rewrite each number using the LCD (least common denominator), add the numerators and simplify.

Reminder

Solution:

The slope of the line is \(\frac{2}{3}\).

\[
\text{slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{2}{4} = \frac{1}{2}.
\]
The difference is 5\frac{1}{10}.

Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.

Key Idea
The surface area of a cylinder is the sum of the areas of the bases and the lateral surface.

Surface Area: $S = 2\pi r^2 + 2\pi rh$

Base
Lateral surface

Reminder: Round your answer to the nearest tenth. Your next card will look like this.

Solution:
\[
\begin{align*}
\frac{5}{1} &= \frac{5}{15} \\
\frac{5}{3} + \frac{5}{6} &= \frac{5}{3} + \frac{5}{6} \\
\left(\frac{5}{3} - \frac{5}{4}\right) &= \frac{5}{4}
\end{align*}
\]
Solution:

First, convert 15.24 centimeters to inches.

\[ 15.24 \text{ cm} \times \frac{1 \text{ in}}{2.54 \text{ cm}} \approx 6 \text{ in.} \]

Then, find the surface area.

\[ S = 2 \pi r h \]

\[ S = 2 \pi (6)^2 + 2 \pi (6)(9) \]

\[ S = 2 \pi r^2 + 108 \pi \]

\[ S \approx 565.2 \text{ in.}^2 \]

The surface area is about 565.2 square inches.

In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

- Triangle A: (0, 0), (0, 9), (9, 0)
- Triangle B: (0, 0), (6, 0), (0, 9)
- Triangle C: (0, 0), (6, 0), (0, 6)

Two figures are similar if corresponding side lengths are proportional and corresponding angles have the same measure.

Two figures are called similar if they have the same shape but not necessarily the same size.

Key Ideas

Congratulations! Once you have checked the solution with your teacher, your group is all done!
Solution:
A rectangular pyramid is a solid that has lateral faces, so the solid shown is a rectangular pyramid. So, if you do not see a rectangular base and four triangular faces, each card for your group should note this.

Key Idea
A stem-and-leaf plot uses the digits of data values to organize a data set. Each data value is broken into a stem (digit or digits on the left) and a leaf (digit or digits on the right).

Reminder: A rectangular pyramid is a solid that has lateral faces, so the solid shown is a rectangular pyramid.

Your next card will look like this.

<table>
<thead>
<tr>
<th>Songs Downloaded</th>
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<tbody>
<tr>
<td>26</td>
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<tr>
<td>45</td>
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<tr>
<td>6</td>
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<td>34</td>
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<td>34</td>
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<td>9</td>
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</tbody>
</table>

Make a stem-and-leaf plot of the number of songs downloaded.
To make a stem-and-leaf plot:
1.) Order the data.
2.) Choose the stems and the leaves. Because the data values range from 5 to 45, use the tens digits for the stems and the ones digits for the leaves.
3.) Write the stems to the left of the vertical line.
4.) Write the leaves for each stem to the right of the vertical line.
5.) Create a title and a key.

**Key Ideas**
- A proportion is an equation stating that two ratios are equivalent.
- To solve a proportion, use the Multiplication Property of Equality or the Cross Products Property.

**Solution:**
It costs $37.50 for 5 tickets to the movies.
How much 3 tickets cost.
Write and solve a proportion to determine how much 3 tickets cost.

**Songs Downloaded**

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<tbody>
<tr>
<td>0</td>
<td>5 6 6 9</td>
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<td>1</td>
<td>4 9</td>
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<td>2</td>
<td>0 1 6</td>
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<td>3</td>
<td>4 4</td>
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<td>4</td>
<td>5</td>
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</table>

Key: 1 | 4 = 14 songs
Solution:

Write and solve a proportion.

\[ \frac{37.50}{3} = \frac{5}{x} \]

Cross Products Property

Multiply.

\[ 112.5 \times 3 = 5x \]

Divide.

\[ 22.5 = x \]

It costs $22.50 for 3 tickets to the movies.

Key Idea

Use the order of operations when evaluating an expression.

Reminder

Your next card will look like this.

Evaluate the expression

\[ x^2 - |y - 2| + \frac{12}{x} \]

when \( x = 2 \) and \( y = -1 \).
Key Ideas

• Reminder
• Solving an equation
• The perimeter of a figure
• Undoing like terms

Solution:
Substitute 2 for x and -1 for y. Then simplify.

x = 2 - 1 - 2
x = 1

y = \frac{1}{12}

The perimeter of the trapezoid is 30.

What is the value of x?

Your next card will look like this.

Reminder

1. Undoing like terms
2. Undoing addition and subtraction
3. Undoing multiplication and division

Solving an equation

• The sum of the side lengths
• Key Ideas
Solution:

The value of \( x \) is 2.

\[
\begin{align*}
2 &= 2 + x \\
2 &= 2 + 5 \\
\\
2 &= 7
\end{align*}
\]

Graph the line that passes through the two points. (-2, 2) and (0, 3). Then find the slope of the line.
What is the difference of $1$ and $-2$?

Solution:

Your next card will look like this.

Reminder

Key Ideas

- Add the numerators and simplify (least common denominator).
- Each number using the LCD
- To add rational numbers, rewrite each numerator using the LCD
- To subtract a rational number, add its opposite.
- Subtract a rational number.

Solution:

What is the difference of $\frac{1}{3}$ and $-2\frac{5}{6}$?

The slope of the line is $\frac{3}{2}$.  

Slope = \frac{\text{change in } y}{\text{change in } x} = \frac{3}{2}
Solution:

The difference is $rac{41}{10}$.

\[
\frac{41}{10} = \frac{4}{1} + \frac{1}{10}
\]

\[
\frac{4}{1} + \frac{1}{10} = \frac{40}{10} + \frac{1}{10} = \frac{41}{10}
\]

\[
\frac{5}{4} + \frac{1}{2} = \frac{5}{4} + \frac{2}{4} = \frac{7}{4} = \frac{2}{5} + \frac{1}{10}
\]

\[
\frac{2}{5} + \frac{1}{10} = \frac{4}{10} + \frac{1}{10} = \frac{5}{10} = \frac{1}{2}
\]

Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.

The surface area of a cylinder is the sum of the areas of the bases and the lateral surface. Surface Area:

\[
S = 2\pi r^2 + 2\pi rh
\]

Key Idea

Surface Area: $5 = 2\pi r + 2\pi r^2$
First, convert 17.78 centimeters to inches.

\[ 17.78 \text{ cm} \times \frac{1 \text{ in.}}{2.54 \text{ cm}} \approx 7 \text{ in.} \]

Then, find the surface area.

\[ S = 2 \pi r^2 + 2 \pi r h \]

Triangle A: (0, 0), (0, 6), (9, 0)
Triangle B: (0, 0), (6, 0), (0, 9)
Triangle C: (0, 0), (6, 0), (0, 6)

In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

Two figures are similar if corresponding side lengths are proportional and corresponding angles are the same size. Figures that have the same shape but not necessarily the same size are called similar.

\[ \pi \approx 3.14 \]

The surface area is about 703.4 square inches.
Solution:
A rectangular prism is a solid that has two parallel, congruent rectangular bases. The other faces are parallelograms. So, the solid shown is a rectangular prism.

Key Idea
A stem-and-leaf plot uses the digits of data values to organize a data set. Each data value is broken into a stem (digit or digits on the left) and a leaf (digit or digits on the right).

Songs Downloaded

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</table>

Make a stem-and-leaf plot of the number of songs downloaded.

Reminder:
Go back and try again if you do not see a rectangular prism. Each card for your group should have this solid.
Solution:
To make a stem-and-leaf plot:

1. Order the data.
2. Choose the stems and the leaves. Because data values range from 5 to 45, use the tens digits for the stems and the ones digits for the leaves.
3. Write the stems to the left of the vertical line. Write the leaves for each stem to the right of the vertical line.
4. Write the leaves for each stem to the right of the vertical line.
5. Create a title and a key.

Key: 1 | 4 = 14 songs

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</tr>
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<td>3</td>
<td>4 9</td>
</tr>
<tr>
<td>4</td>
<td>5 5</td>
</tr>
</tbody>
</table>

Key Ideas:
- A proportion is an equation stating that two ratios are equivalent.
- To solve a proportion, use the Multiplication Property of Equality or the Cross Products Property.

Problem:
It costs $37.50 for 5 tickets to the movies. How much 9 tickets cost.

Write and solve a proportion to determine how much 9 tickets cost.
Solution:
Write and solve a proportion.
\[ \frac{3}{9} = \frac{X}{5} \]
Cross Products Property
\[ 3 \cdot 5 = 9 \cdot X \]
\[ 15 = 9X \]
Multiply.
\[ 1.67 = X \]
Divide.

Your next card will look like this.

Reminder
Evaluating an expression involves using the order of operations when evaluating an expression. Use the order of operations when evaluating an expression:

1. Parentheses
2. Exponents
3. Multiplication and Division (from left to right)
4. Addition and Subtraction (from left to right)

Evaluate the expression:
\[ \frac{x}{y} + 2 \]
when \( x = 3 \) and \( y = -1 \).

It costs $67.50 for 9 tickets to the movies.

Solution:
Write and solve a proportion.

- Divide
- \( 67.50 \div x = 7.50 \)
- Multiply
- \( 33.75 = 5x \)
- Cross Products Property
- Make the equation:
  \[ 31.50 \times x = 9 \times 6 \]
  \[ 31.50 \times x = 54 \]
  \[ x = \frac{54}{31.50} \]
Key Ideas

1. Combine like terms.
2. Undo addition and subtraction.
3. Undo multiplication and division.

Reminder: The perimeter of a figure is the sum of the side lengths.

The perimeter of the trapezoid is 60.

What is the value of \( x \)?

Solution: Substitute 3 for \( x \) and -1 for \( y \).

\[ 3x + 5 \]

\[ 5x \]

\[ x + 5 \]

\[ 3x \]

\[ \frac{x}{12} + 1 = \frac{y}{12} \]

\[ x = \frac{y}{2} - 1 \]

\[ x = \frac{3}{2} \]

\[ 4x + 4 = x + 5 \]

\[ 4 - x + 6 = 10 \]

\[ 10 = 10 \]
Graph the line that passes through the two points: (-2, 2) and (1, 2). Then find the slope of the line.

The value of $x$ is 5.

$$x = 5$$

$$\frac{10}{50} = \frac{x}{10}$$

$$50x = 10 \times 50$$

$$x = \frac{10}{50} = \frac{10}{10} = \frac{60}{10} + 3x + 5x$$

$$p = \text{sum of side lengths}$$

Solution:

The value of $x$ is 5.
Solution:
What is the difference of \( \frac{1}{4} \) and \( 3 \frac{1}{2} \)?

The slope of the line is 0.

\[
\text{slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{0}{0} = 0
\]
Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.

**Key Idea**

The surface area of a cylinder is the sum of the areas of the bases and the lateral surface.

**Surface Area:**

\[ S = 2\pi r^2 + 2\pi rh \]

**Base**

**Lateral Surface**

1 in. = 2.54 cm

\[ 12.7 \text{ cm} \approx 4.96 \text{ in.} \]

\[ 9 \text{ in.} \]

**Solution:**

The difference is -1 1/2.
Solution:
First, convert 12.7 centimeters to inches.

\[
12.7 \text{ cm} \times \frac{1 \text{ in.}}{2.54 \text{ cm}} \approx 5 \text{ in.}
\]

Then, find the surface area.

\[
S = 2\pi r^2 + 2\pi rh
\]

\[
= 2\pi (5)^2 + 2\pi (5)(9)
\]

\[
= 140\pi + 90\pi
\]

\[
\approx 439.6 \text{ in.}^2
\]

The surface area is about 439.6 square inches.

In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

**Key Ideas**

- Figures that have the same shape but not necessarily the same size are called similar figures.
- Two figures are similar if corresponding side lengths are proportional, and corresponding angles have the same measure.

**Reminder**

Once you have checked the solution with your teacher, your group is all done!
Solution: A hexagonal pyramid is a solid that has one hexagonal base and six triangular lateral faces.

So, the solid shown is a hexagonal pyramid.

Key Idea

A stem-and-leaf plot uses the digits of data values to organize a data set. Each data value is broken into a stem (digit or digits on the left) and a leaf (digit or digits on the right).

Make a stem-and-leaf plot of the number of songs downloaded.

<table>
<thead>
<tr>
<th>Songs Downloaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
</tr>
<tr>
<td>16</td>
</tr>
<tr>
<td>34</td>
</tr>
<tr>
<td>34</td>
</tr>
<tr>
<td>41</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>14</td>
</tr>
<tr>
<td>27</td>
</tr>
<tr>
<td>34</td>
</tr>
<tr>
<td>36</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

Reminder

Your next card will look like this.

Each card for your group should have this solid. If you do not see a hexagonal pyramid, go back and try again.
Solution:
To make a stem-and-leaf plot:
1.) Order the data. 2.) Choose the stems and the leaves. Because the data values range from 5 to 45, use the tens digits for the stems and the ones digits for the leaves. 3.) Write the stems to the left of the vertical line. 4.) Write the leaves for each stem to the right of the vertical line. 5.) Create a title and a key.

Key Ideas
- A proportion is an equation stating two ratios are equivalent.
- To solve a proportion, use the Multiplication Property of Equality or the Cross Products Property.

Reminder
Your next card will look like this.

Key: 4 | 1 = 14 songs

<table>
<thead>
<tr>
<th>Stem</th>
<th>Leaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5 9</td>
</tr>
<tr>
<td>1</td>
<td>4 6</td>
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<td>2</td>
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<tr>
<td>3</td>
<td>4 4 4 6</td>
</tr>
<tr>
<td>4</td>
<td>1 5</td>
</tr>
</tbody>
</table>

If costs $37.50 for 5 tickets to the movies, how much do 6 tickets cost?
Solution:
Write and solve a proportion.

\[
\frac{3}{6} = \frac{x}{45}
\]

Cross Products Property

\[
3 \cdot 45 = 6 \cdot x
\]

\[
x = \frac{3 \cdot 45}{6}
\]

\[
x = \frac{135}{6}
\]

\[
x = 22.5
\]

It costs $45 for 6 tickets to the movies.

Key Idea
Use the order of operations when evaluating an expression.

Reminder
Evaluating an expression when \(x = -2\) and \(y = 1\):

\[
x^2 - |y - 2| + \frac{x}{y}
\]

\[
= (-2)^2 - |1 - 2| + \frac{-2}{1}
\]

\[
= 4 - 1 - 2
\]

\[
= 1
\]

Solution:
Write and solve a proportion.
Solution:
Substitute -2 for \(x\) and 1 for \(y\). Then simplify.

\[
\begin{align*}
3x^2 - |y - 2| + \frac{x}{12} &= (-2)^2 - |1 - 2| + \frac{1}{12} \\
&= 4 - 1 + \frac{1}{12} \\
&= 3 + \frac{1}{12} \\
&= \frac{36}{12} + \frac{1}{12} \\
&= \frac{37}{12}
\end{align*}
\]

The perimeter of the trapezoid is 100.
What is the value of \(x\)?

Key Ideas
- The perimeter of a figure is the sum of the side lengths.
- Solving an equation:
  1. Combine like terms.
  2. Undo addition and subtraction.
  3. Undo multiplication and division.
3CAVENGER(Unt'sLUKE"LOOK
¥"IG)DEAS,EARNING

Solution:

\[ P = \text{Sum of side lengths} \]

\[ 100 = (x + 5) + 3x + (x + 5) + 5 \]

\[ 100 = 10x + 10 \]

\[ 90 = 10x \]

\[ x = 9 \]

The value of \( x \) is 9.

Graph the line that passes through the two points \((-2, 2)\) and \((3, 0)\). Then find the slope of the line.

Key Ideas

- An ordered pair \((x, y)\) is a pair of numbers that is used to locate a point in a coordinate plane.
- Slope is the rate of change between any two points on a line.
- To find the slope of a line, find the ratio of the vertical change to the horizontal change.

Reminder

9
Key Ideas

1. To add or subtract a rational number, rewrite each number using the LCD (Least Common Denominator).
2. To add rational numbers, rewrite each number using the LCD and add the numerators and denominators.
3. To subtract a rational number, add its opposite.

Solution:

What is the difference of $-\frac{3}{5}$ and $2\frac{5}{8}$?

The slope of the line is $\frac{5}{2}$. The change in $y$ over the change in $x$ is $\frac{5}{2}$. The slope is negative, indicating a downward trend.

The slope of the line is $-\frac{5}{2}$. The change in $y$ over the change in $x$ is $-\frac{5}{2}$. The slope is negative, indicating a downward trend.
Solution:

\[ -1 - 2 = -1 + (-2) = -3 + (-1) = -4 \]

The difference is -4.

Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.

The surface area of a cylinder is the sum of the areas of the bases and the lateral surface. Surface Area:

\[ S = 2\pi r^2 + 2\pi rh \]

Key Idea

Surface Area: \( S = 2\pi r^2 + 2\pi rh \)

Lateral surface

The sum of the areas of the bases and the lateral surface is the surface area of a cylinder.
Solution:

First, convert 20.32 centimeters to inches.

\[ 20.32 \text{ cm} \times \frac{1 \text{ in.}}{2.54 \text{ cm}} \approx 8 \text{ in.} \]

Then, find the surface area.

\[ S = 2 \pi r^2 + 2 \pi rh \]

\[ S = 2 \pi (8)^2 + 2 \pi (8)(9) \]

\[ S = 2 \pi \cdot 64 + 144 \pi \]

\[ S = 128 \pi + 144 \pi \]

\[ S = 272 \pi \approx 854.1 \text{ in.}^2 \]

The surface area is about 854.1 square inches.

In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

**Key Ideas**

- Figures have the same measure.
- Corresponding side lengths are proportional, and corresponding angles are the same size but not necessarily the same shape.
- Figures that have the same size are called similar figures.

**Reminder**

- Two figures are similar if corresponding side lengths are proportional, and corresponding angles have the same measure.

Triangle A: (0, 0), (9, 0), (0, 9)

Triangle B: (0, 0), (6, 0), (0, 9)

Triangle C: (0, 0), (6, 0), (0, 6)

Congratulations! Once you have checked the solution with your teacher, your group is all done!
Solution: A triangular pyramid is a solid that has one triangular base and three triangular lateral faces. So, the solid shown is a triangular pyramid.
Solution:

To make a stem-and-leaf plot:

1.) Order the data. 
2.) Choose the stems and the leaves. Because the data values range from 5 to 63, use the tens digits for the stems and the ones digits for the leaves. 
3.) Write the stems to the left of the vertical line. 
4.) Write the leaves for each stem to the right of the vertical line. 
5.) Create a title and a key. 

Key Ideas:

- A proportion is an equation stating that two ratios are equivalent. 
- To solve a proportion, use the Multiplication Property of Equality or the Cross Products Property. 
- A proportion is an equation of the form 

\[
\frac{a}{b} = \frac{c}{d}
\]

where a, b, c, and d are numbers, and \( b \) and \( d \) are not equal to zero.

Example:

It costs $41.25 for 5 tickets to the movies. Write and solve a proportion to determine how much 8 tickets cost.

\[
\frac{5 \text{ tickets}}{41.25 \text{ dollars}} = \frac{8 \text{ tickets}}{x \text{ dollars}}
\]

Solve for \( x \) to find the cost of 8 tickets.

\[
x = \frac{8 \times 41.25}{5} = 61.8 \text{ dollars}
\]

Key: 1 | 4 = 14 songs

Songs Downloaded

<table>
<thead>
<tr>
<th>Stem</th>
<th>Leaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>9</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
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<tr>
<td></td>
<td>4</td>
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<tr>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Data: 5 songs, 9 songs, 4 songs, 0 songs, 4 songs, 1 song, 5 songs, 9 songs, 0 songs, 3 songs.
**Solution:**

Write and solve a proportion.

\[
\frac{41.25}{x} = \frac{5}{8}
\]

Cross Products Property

Evaluate the expression when \( x = 1 \) and \( y = -3 \).

\[
x^2 - 2| + \frac{12}{x}
\]

It costs $66 for 8 tickets to the movies.

\[
\begin{align*}
66 &= x \\
330 &= 5x \\
425 &= 8 \cdot \frac{s}{x} \\
425 &= 8 \cdot \frac{5}{s} \\
425 &= 8 \cdot \frac{5}{x}
\end{align*}
\]
Solution:

Substitute 1 for \( x \) and -3 for \( y \). Then simplify.

\[
\begin{align*}
\text{Solution:} & \\
& 1 \quad 2 \quad 3 \quad 12 \\
x & -5 + 12 & = 7 \\
& -5 + 12 & = 7 \\
& \frac{x}{12} + \frac{1}{12} & = \frac{-3}{12} - \frac{2}{12} & = \frac{x}{12} - \frac{5}{12} \\
& \text{Substitute } 1 \text{ for } x \text{ and } -3 \text{ for } y. \text{ Then simplify.}
\end{align*}
\]
Solution:

\[ P = \text{sum of side lengths} \]

The value of \( x \) is 4.

\[
\begin{align*}
42 &= (x+3) + 2x + (x+3) + 5x \\
-6 &= 9x + 6 \\
26 &= 9x \\
\frac{26}{9} &= x
\end{align*}
\]

Graph the line that passes through the two points (2, -3) and (1, 1). Then find the slope of the line.

Key Ideas

An ordered pair \((x, y)\) is a pair of numbers that is used to locate a point in a coordinate plane.

Slope is the rate of change between any two points on a line.

To find the slope of a line, find the ratio of the vertical change to the horizontal change.

Reminder

The ratio of the vertical change to the horizontal change is called the slope of a line.
Your next card will look like this.

**Solution:**

The slope of the line is -1.

\[
\text{Slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{-1}{1} = -1
\]

What is the difference of \(\frac{5}{4}\) and \(-\frac{3}{2}\)?

**Key Ideas**

- Add and subtract rational numbers and simplify.
- Least common denominator.
- Each number using the LCD.
- To add rational numbers, rewrite each as a fraction with the same denominator.
- To subtract a rational number, change the sign of the number and add.

Reminder
Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.

Key Idea

The surface area of a cylinder is the sum of the areas of the bases and the lateral surface.

\[
\text{Surface Area} = \pi r^2 + 2\pi rh
\]

Your next card will look like this.

Reminder

\[
1 \text{ in.} = 2.54 \text{ cm}
\]

\[
8 \text{ in.} = 15.24 \text{ cm}
\]

Solution:

The difference is \(1\frac{1}{2}\).
Solution:
First, convert 15.24 centimeters to inches.

\[ 15.24 \text{ cm} \times \frac{1 \text{ in.}}{2.54 \text{ cm}} \approx 6 \text{ in.} \]

Then, find the surface area.

\[ S = 2\pi r h + 2\pi r^2 \]

For the given dimensions:

\[ r = 6 \text{ in.}, \quad h = 8 \text{ in.} \]

\[ S = 2\pi (6)^2 + 2\pi (6)(8) \]

\[ S = 72\pi + 96\pi \]

\[ S = 168\pi \approx 527.5 \text{ in.}^2 \]

The surface area is about 527.5 square inches.

In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

**Key Ideas**

- Figures that have the same shape but not necessarily the same size are called similar figures.
- Two figures are similar if corresponding side lengths are proportional and corresponding angles are the same size.

**Triangle A:** (0, 0), (6, 0), (0, 6)
**Triangle B:** (0, 0), (6, 0), (0, 9)
**Triangle C:** (0, 0), (6, 0), (0, 6)

**Reminder**

Congratulations!

Once you have checked the solution with your teacher, your group is all done!
A pentagonal prism is a solid that has two parallel, congruent pentagonal bases. The other faces are parallelograms.

Solution:
A pentagonal prism is a solid that has two parallel, congruent pentagonal bases. The other faces are parallelograms. So the solid shown is a pentagonal prism.

Key Idea
A stem-and-leaf plot uses the digits of data values to organize a data set. Each data value is broken into a stem (digit or digits on the left) and a leaf (digit or digits on the right).

Songs Downloaded

<table>
<thead>
<tr>
<th>Songs Downloaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
</tr>
<tr>
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</tr>
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<td>31</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>63</td>
</tr>
</tbody>
</table>

Reminder
Make a stem-and-leaf plot of the number of songs downloaded.

Your next card will look like this. Each card for your group should have this solid. If you do not see a pentagonal prism, go back and try again.
Solution:

To make a stem-and-leaf plot:

1.) Order the data.
2.) Choose the stems and the leaves. Because the data values range from 5 to 63, use the tens digits for the stems and the ones digits for the leaves.
3.) Write the stems to the left of the vertical line. Write the leaves for each stem to the right.
4.) Write the leaves for each stem to the right of the vertical line.
5.) Create a title and a key.

Key: $1|4=14$ songs

<table>
<thead>
<tr>
<th>Stem</th>
<th>Leaf</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>5 8 9</td>
</tr>
<tr>
<td>1</td>
<td>4 7</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>1 1 5</td>
</tr>
<tr>
<td>4</td>
<td>5 8</td>
</tr>
<tr>
<td>5</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>3</td>
</tr>
</tbody>
</table>

Example:
- If costs $41.25 for 5 tickets to the movies, how much do 3 tickets cost?

Write and solve a proportion to determine.

Proportion is an equation stating that two ratios are equivalent.

Solve a proportion: use the Multiplication Property of Equality or the Cross Products Property.

Reminder: 1 | 4 = 14 songs
Solution:
Write and solve a proportion.

\[
\frac{41.25}{3} = \frac{5}{x}
\]

Cross Products Property

\[
41.25 \cdot x = 3 \cdot 5
\]

Multiply

\[
x = \frac{15}{41.25}
\]

Divide

It costs $24.75 for 3 tickets to the movies.

Evaluate the expression when \( x = -1 \) and \( y = 2 \).

\[
x^2 - y - 2 + \frac{x}{12}
\]

Key Idea
Use the order of operations when evaluating an expression.

Reminder
Evaluation of an expression when using the order of operations.

\[
\text{Solution:}
\]

Your next card will look like this.

Reminder
$24.75

Your next card will look like this.

Reminder

When \( x = -1 \) and \( y = 2 \)

\[
\frac{x}{12} = \frac{x^2 - y - 2}{12}
\]
3. Substitution and multiplication and addition.
2. Substitution and addition and multiplication.
1. Combine like terms.

Solving an equation:

- The perimeter of a figure is the sum of the side lengths.
- Key Ideas

Solution:

Substitute 1 for x and 2 for y. Then simplify:

-11

The perimeter of the trapezoid is 78.

- What is the value of x?

- Your next card will look like this.
Solution:

\[ P = \text{Sum of side lengths} \]
\[ 78 = (x + 3) + 2x + (x + 3) + 5x \]
\[ 78 = 9x + 6 \]
\[ -6 \quad -6 \]
\[ 72 = 9x \]
\[ 72 = 9x \]
\[ \frac{72}{9} = x \]
\[ 8 = x \]

The value of \( x \) is 8.

Graph the line that passes through the two points \((-2, 2)\) and \((0, -2)\). Then find the slope of the line.

Key Ideas

- An ordered pair \((x, y)\) is a pair of numbers that is used to locate a point in a coordinate plane.
- Slope is the rate of change between any two points on a line.
- To find the slope of a line, find the ratio of the vertical change to the horizontal change.
Your next card will look like this.

**Key Ideas**

- Subtract a rational number.
- Add its opposite.
- Add rational numbers:
  - Rewrite each number using the least common denominator.
  - Add the numerators and simplify.

**Reminder**

What is the difference of $-\frac{1}{2}$ and $2\frac{5}{9}$?

The slope of the line is $-2$.

\[ \text{Slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{-2}{4} = -\frac{1}{2} \]
Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.

Key Idea:

The surface area of a cylinder is the sum of the areas of the bases and the lateral surface.

Surface Area: $S = 2\pi r^2 + 2\pi rh$

Base

Lateral surface

Reminder

Your next card will look like this.

17.78 cm

1 in. \( \approx \) 2.54 cm

8 in.

Solution:

The difference is $-4\frac{1}{2}$.

\[
\begin{align*}
-4 \frac{1}{2} &= \frac{7}{2} - 4 = \frac{7}{2} - \frac{8}{2} = -\frac{1}{2} \\
\frac{7}{2} &= \frac{7}{2} \\
\frac{1}{2} + \frac{1}{2} &= \frac{1}{2} \\
\frac{1}{2} + \frac{1}{2} &= \frac{1}{2} \\
-\frac{1}{2} &= -\frac{1}{2} \\
\frac{7}{2} - \frac{2}{4} &= \frac{7}{2} - \frac{1}{2} = \frac{6}{2} = 3
\end{align*}
\]

So the solution is $3$. 


Solution:
First, convert 17.78 centimeters to inches.

\[
17.78 \text{ cm} \times \frac{1 \text{ in.}}{2.54 \text{ cm}} \approx 7 \text{ in.}
\]

Then, find the surface area.

\[
S = 2 \pi r h + 2 \pi r^2
\]

\[
= 2 \pi (7)^2 + 2 \pi (7)(11.78)
\]

\[
= 88.6 + 523.7
\]

\[
= 612.3 \text{ in.}^2
\]

The surface area is about 612.3 square inches.

In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

- Triangle A: (0, 0), (9, 0), (0, 6)
- Triangle B: (0, 0), (6, 0), (0, 9)
- Triangle C: (0, 0), (6, 0), (0, 6)

Two figures are similar if corresponding side lengths are proportional and corresponding angles are equal.

Figures that have the same size but not necessarily the same shape are called similar figures.

Two figures are similar if corresponding side lengths are proportional, and corresponding angles have the same measure.
Solution:
A triangular prism is a solid that has two parallel parallelograms. So, the solid shown is a triangular prism.

Key Idea
A stem-and-leaf plot uses the digits of the data to organize a data set. Each data value is broken into a stem (digit or digits on the left) and a leaf (digit or digits on the right).

Make a stem-and-leaf plot of the number of songs downloaded.

Songs Downloaded

<table>
<thead>
<tr>
<th>3</th>
<th>1</th>
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<tbody>
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<td>3</td>
</tr>
<tr>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Your next card will look like this.

Each card for your group should have this solid. If you do not see a triangular prism, go back and try again.
To make a stem-and-leaf plot:
1.) Order the data.
2.) Choose the stems and the leaves. Because the data values range from 5 to 63, use the tens digits for the stems and the ones digits for the leaves.
3.) Write the stems to the left of the vertical line.
4.) Write the leaves for each stem to the right of the vertical line.
5.) Create a title and a key.

**Songs Downloaded**

<table>
<thead>
<tr>
<th>Stem</th>
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</tr>
</thead>
<tbody>
<tr>
<td>0</td>
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<td></td>
</tr>
<tr>
<td>6</td>
<td>0 3</td>
</tr>
</tbody>
</table>

**Key**: 1 | 4 = 14 songs

It costs $41.25 for 5 tickets to the movies.

Write and solve a proportion to determine how much 4 tickets cost.
Solution:

Write and solve a proportion.

\[
\frac{41.25}{x} = \frac{5}{4}
\]

Cross Products Property

\[
x \cdot 5 = 41.25 	imes 4
\]

Multiply.

\[
20.6 = x
\]

Divide.

It costs $33.00 for 4 tickets to the movies.

Evaluate the expression when \(x = -1\) and \(y = 3\).

\[
x^2 - |y - 2| + \frac{y}{12}
\]

This card will look like this.
Solution:
Substitute -1 for $x$ and 3 for $y$. Then simplify.

$$x^2 - |y - 2| + \frac{x}{12} = (-1)^2 - |3 - 2| + \frac{-1}{12} = 1 - 1 + (-1) = -1$$

The perimeter of the trapezoid is 60.

What is the value of $x$?

Your next card will look like this.

Reminder:
1. Combine like terms.
2. Undo addition and subtraction.
3. Undo multiplication and division.

Key Ideas:
- 3CAVENGER
- LNk multpliication and division
- Sutraction
- 2. Lhodo addition and Subtraction
- 1. Combine like terms
- Solving an equation
- The perimeter of a figure
Solution:

\[ P = \text{sum of side lengths} \]

The value of \( x \) is 6.

\[
\begin{align*}
6 & = x + 3 + 2x + (x + 3) + 5x \\
60 & = 9x \\
6 & = 9x \\
-x & = -6 \\
-x & = 6 \\
x & = 9 \\
\end{align*}
\]

An ordered pair \((x, y)\) is a pair of numbers that is used to locate a point in a coordinate plane.

Reminder

Key Ideas

To find the slope of a line, find the ratio of the vertical change to the horizontal change.

Graph the line that passes through the two points: \((-2, 2)\) and \((1, 1)\). Then find the slope of the line.
Reminder

Key Ideas

Solution:

Your next card will look like this.

What is the difference of $-\frac{1}{4}$ and $\frac{3}{2}$?

The slope of the line is $-\frac{3}{1}$.

$$\text{slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{\frac{3}{2}}{-1}$$
Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.

Solution:

Key Idea

The surface area of a cylinder is the sum of the areas of the bases and the lateral surface.

Surface Area:

\[ S = 2\pi r^2 + 2\pi rh \]

Base

Lateral surface

Reminder

1 in. = 2.54 cm

1 in. = 2.54 cm

Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.
Solution:
First, convert 22.86 centimeters to inches.

\[
22.86 \text{ cm} \times \frac{1 \text{ in}}{2.54 \text{ cm}} \approx 9 \text{ in.}
\]

Then, find the surface area.

\[
S = 2 \pi r^2 + 2 \pi rh
\]

Triangle C: (0, 0), (6, 0), (0, 6)
Triangle B: (0, 0), (6, 0), (0, 9)
Triangle A: (0, 0), (9, 0), (0, 6)

The surface area is about 847.8 square inches.

In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

Key Ideas
- Key Ideas
- Figures that have the same angles have the same measure.
- Corresponding and corresponding angles correspond.
- Corresponding side lengths are proportional.
- Two figures are similar if their corresponding side lengths are proportional and corresponding angles have the same measure.
- Figures that have the same size are called similar.
- Figures which have the same vertices.
- Corresponding angles are equal. Explain your reasoning.

Congratulations!
Once you have checked the solution with your teacher, your group is all done!
Solution:

A cone is a solid that has one circular base and one vertex. So, the solid shown is a cone.

Key Idea

A stem-and-leaf plot uses the digits of data values to organize a data set. Each data value is broken into a stem (digit or digits on the left) and a leaf (digit or digits on the right).

Songs Downloaded

<table>
<thead>
<tr>
<th>14</th>
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<tr>
<td>20</td>
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<tr>
<td>61</td>
<td>63</td>
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<tr>
<td>9</td>
<td>5</td>
</tr>
</tbody>
</table>

Make a stem-and-leaf plot of the number of songs downloaded.

Reminder:

Your next card will look like this.

Each card for your group should have this solid. If you do not see a cone, go back and try again.
To make a stem-and-leaf plot:
1.) Order the data. 2.) Choose the stems and the leaves. Because the data values range from 5 to 63, use the tens digits for the stems and the ones digits for the leaves. 3.) Write the stems to the left of the vertical line. 4.) Write the leaves for each stem to the right of the vertical line. 5.) Create a title and a key.

Key Ideas
- A proportion is an equation stating that two ratios are equivalent.
- To solve a proportion, use the Multiplication Property of Equality or the Cross Products Property.

Solution:
It costs $41.25 for 5 tickets to the movies. Write and solve a proportion to determine how much 9 tickets cost.

<table>
<thead>
<tr>
<th>Songs Downloaded</th>
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</thead>
<tbody>
<tr>
<td><strong>Stem</strong></td>
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<td>3</td>
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<td>4</td>
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<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
</tbody>
</table>

Key: 1 | 4 = 14 songs
Solution:

Write and solve a proportion.

\[
\frac{41.25}{x} = \frac{5}{9}
\]

Cross Products Property

\[371.25 = \frac{5}{9} \times x\]

Divide.

\[x = \frac{371.25 \times 9}{5}\]

Multiply.

\[x = 74.25\]

It costs $74.25 for 9 tickets to the movies.

Evaluate the expression when \(x = 1\) and \(y = -2\).

\[
\frac{x}{y - 2} + \frac{x}{12}
\]

Use the order of operations when evaluating an expression.

Key Idea:

Reminder:

Your next card will look like this.
Solution:
Substitute 1 for \( x \) and -2 for \( y \). Then simplify.

\[
\begin{align*}
x^2 & - |y| + |x| = 12 - | -2 | + |1| \\
& = 12 + 2 + 1 \\
& = 15
\end{align*}
\]

The perimeter of the trapezoid is 96.

What is the value of \( x \)?
The value of $x$ is 10.

\[ x = 10 \]

\[ \frac{6}{6} = 06 \]

\[ x6 = 06 \]

\[ \frac{9 - 9}{9 + x6} = 96 \]

\[ x + x + 3 + 5x \]

\[ P = \text{sum of side lengths} \]

**Solution:**

10
Your next card will look like this.

**Key Ideas**
- Add the numerators and simplify (least common denominator).
- Each number using the LCD.
- To add rational numbers, rewrite each number using the LCD.
- To subtract a rational number.

**Reminder**
- Subtract a rational number.

**Solution:**
What is the difference of \( \frac{1}{7} \) and \( -2 \frac{5}{4} \)?

The slope of the line is \( \frac{5}{2} \).

\[
\text{Slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{5}{2}
\]
The surface area of a cylinder is the sum of the areas of the bases and the lateral surface. The formula for the surface area of a cylinder is:

\[ S = 2\pi r^2 + 2\pi rh \]

**Key Idea:**
- **Base**
- **Lateral Surface**

**Surface Area:**
- Sum of the areas of the bases and the lateral surface.

**Example:**
Find the surface area of the cylinder in square inches. Round your answer to the nearest tenth.

**Solution:**
The difference is \(4\frac{1}{2}\).
Solution:
First, convert 12.7 centimeters to inches.

\[12.7 \text{ cm} \times \frac{1 \text{ in.}}{2.54 \text{ cm}} \approx 5 \text{ in.}\]

Then, find the surface area.

\[S = 2\pi r^2 + 2\pi rh\]

\[S = 2\pi (5)^2 + 2\pi (5)(6)\]

\[S = 50\pi + 60\pi = 110\pi \approx 345.4 \text{ square inches}\]

The surface area is about 345.4 square inches.

In a coordinate plane, draw the figures with the given vertices. Which figures are similar? Explain your reasoning.

- Triangle C: (0, 0), (6, 0), (0, 6)
- Triangle B: (0, 0), (6, 0), (0, 9)
- Triangle A: (0, 0), (9, 0), (0, 9)

Two figures are similar if corresponding side lengths are proportional and corresponding angles are the same. Figures that have the same shape but not necessarily the same size are called similar figures. Figures with the same angles have the same measure.

Reminder:

- Key Ideas
  - Two figures are similar if corresponding side lengths are proportional and corresponding angles are the same. Figures with the same angles have the same measure.
Triangles A and C are similar because corresponding side lengths are proportional and corresponding angles have the same measure.

\[
\frac{1}{1} = \frac{6}{6} = \frac{\text{Leg 1 of C}}{\text{Leg 1 of C}}
\]

\[
\frac{3}{2} = \frac{9}{6} = \frac{\text{Leg 2 of C}}{\text{Leg 1 of B}}
\]

\[
\frac{1}{1} = \frac{6}{9} = \frac{\text{Leg 2 of C}}{\text{Leg 1 of A}}
\]
A stem-and-leaf plot uses the digits of data values to organize a data set. Each data value is broken into a stem (digit on the left) and a leaf (digit on the right).
Key Ideas

Products Property

- of Equality on the Cross
- the Multiplication Property
- To solve a proportion, use equivalent
- Stating that two ratios are equivalent
- A proportion is an equation

Reminder

Songs Downloaded

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<tr>
<th>Stem</th>
<th>Leaf</th>
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<td>3</td>
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<td>4</td>
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Key: 1 | 4 = 14 songs
Key Idea

Reminder

Use the order of operations when evaluating an expression.

$7.50
Key Ideas

- The perimeter of a figure is the sum of the side lengths.

1. Solving an equation:
   - Combine like terms.
   - Undo addition and subtraction.
   - Undo multiplication and division.

Reminder

- The perimeter of a figure is the sum of the side lengths.
Reminder

- Key Ideas

1. An ordered pair (x, y) is a pair of numbers that is used to locate a point in a coordinate plane.
2. Slope is the rate of change between any two points on a line.
3. To find the slope of a line, find the ratio of the vertical change to the horizontal change.
4. The ratio of the vertical change to the horizontal change is known as the rate of the vertical change.
5. To find the slope of a line, find the rate of change between any two points on a line.
Key Ideas

1. Add the numerators and simplify.
2. Add the opposite.
3. Subtract a rational number.
4. To add rational numbers, rewrite each number using the LCD.
5.Least common denominator.

Reminder

\[-5\]
\[\frac{5}{2}\]
Key Idea

The surface area of a cylinder is the sum of the areas of the bases and the lateral surface.

Surface Area: \(S = 2\pi r^2 + 2\pi rh\)

Base

Lateral surface

Reminder

Surface Area: \(S = 2\pi r^2 + 2\pi rh\)
Key Ideas

- Figures that have the same shape but not necessarily the same size are called similar.
- Two figures are similar if corresponding side lengths are proportional and corresponding angles have the same measure.

Reminder

- Figures similar are called similar.

1492.2 in.$^2$
A stem-and-leaf plot uses the digits of data values to organize a data set. Each data value is broken into a stem (digit on the left) and a leaf (digit or digits on the right).
Key Ideas

Key Ideas for Equating Properties

- To solve a proportion, use equivalent equations that state two ratios are equivalent.
- A proportion is an equation.

Reminder

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</table>

Key: 1 | 4 = 14 songs
Reminder

Key Idea

Use the order of operations when evaluating an expression.

$8.25
Reminder
-5

Key Ideas
1. Combining like terms.
2. Combining addition and subtraction.
3. Combining multiplication and division.

Problem: Solve an equation. Is the sum of the side lengths the perimeter of a figure?
Key Ideas

- An ordered pair (x, y) is a pair of numbers that is used to locate a point in a coordinate plane.
- The slope of a line is the rate of change between any two points on a line.
- To find the slope of a line, find the ratio of the vertical change to the horizontal change.

Reminder

Slope is the rate of change between any two points on a line.
Reminder

Key Ideas

- To add rational numbers, rewrite each number using the LCD (least common denominator).
- To add rational numbers, rewrite each number using the LCD and then add the numerators and simplify.
- To subtract a rational number, add its opposite.
Key Idea

The surface area of a cylinder is the sum of the areas of the bases and the lateral surface. Surface Area: $S = 2\pi r^2 + 2\pi rh$.

Reminder

-3 1/2
Key Ideas

- Figures that have the same shape but not necessarily the same size are called similar figures.
- Two figures are similar if corresponding side lengths are proportional and corresponding angles have the same measure.

Reminder

- Figures are similar if corresponding sides are proportional and corresponding angles have the same measure.

571.8 in.²