
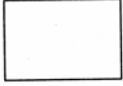




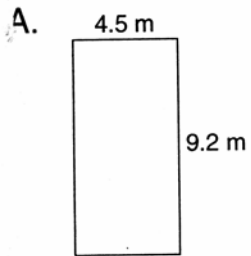


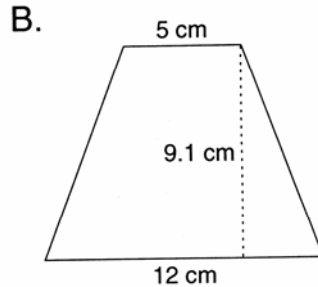
Mixed Practice

 $A = l \cdot w$	 $A = l \cdot w$	 $A = b \cdot h$	 $A = \frac{1}{2} b \cdot h$	 $A = \frac{1}{2} (b_1 + b_2) \cdot h$	 $A = \pi r^2$
--	--	--	--	---	--

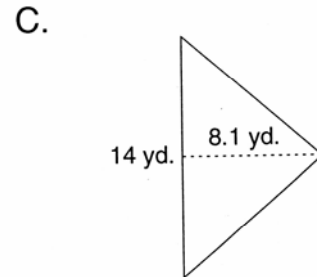
Use the correct formula to find the area of each figure below. Work with a calculator or on scratch paper. Round to the nearest tenth. Write your answers in square units.



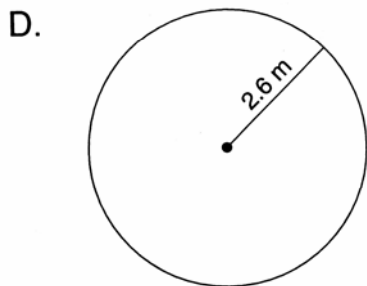
$A = 4.5 \cdot 9.2$
 $A = 41.4 \text{ m}^2$



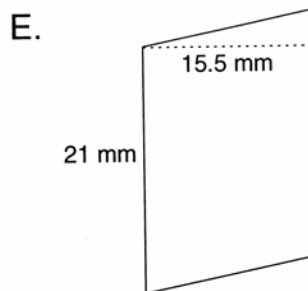
$A =$ _____
 $A =$ _____



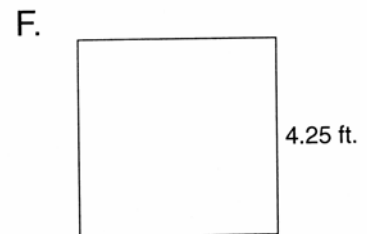
$A =$ _____
 $A =$ _____



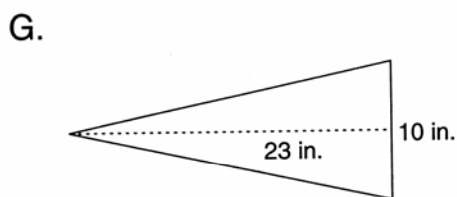
$A =$ _____
 $A =$ _____



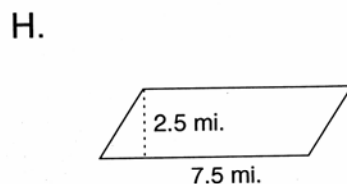
$A =$ _____
 $A =$ _____



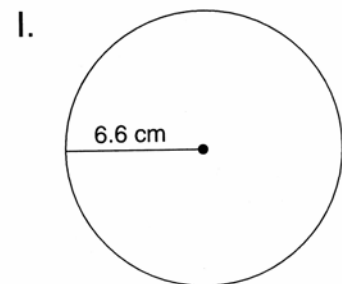
$A =$ _____
 $A =$ _____



$A =$ _____
 $A =$ _____



$A =$ _____
 $A =$ _____

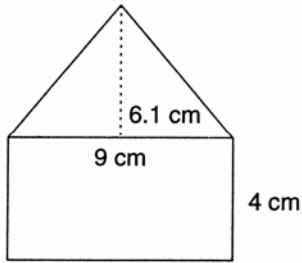


$A =$ _____
 $A =$ _____

Total Area

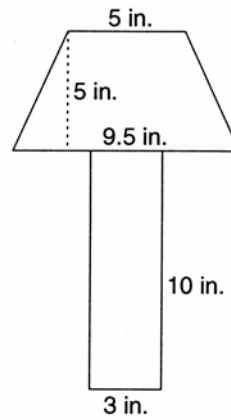
Find the total area of each figure. Round your answers to the nearest tenth. Write your answers in square units.

A.



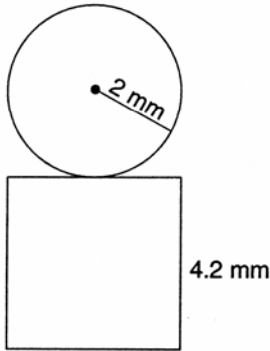
A = _____

B.



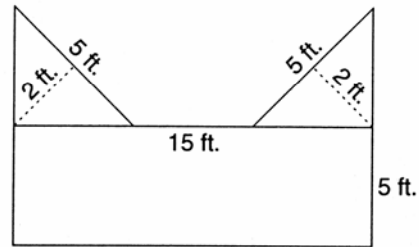
A = _____

C.



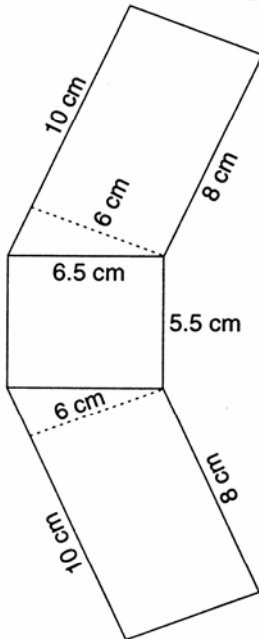
A = _____

D.



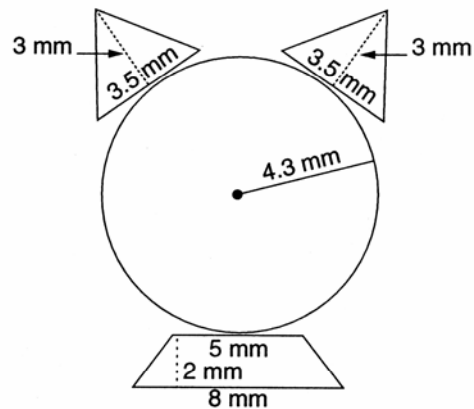
A = _____

E.



A = _____

F.

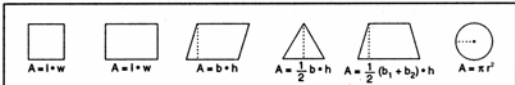


A = _____

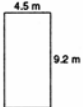
Answer Key

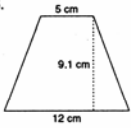
Name _____ Area _____

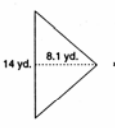
Mixed Practice




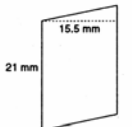
Use the correct formula to find the area of each figure below. Work with a calculator or on scratch paper. Round to the nearest tenth. Write your answers in square units.

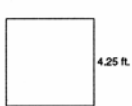
A.  $A = \frac{4.5 \cdot 9.2}{1} = 41.4 \text{ m}^2$

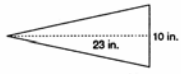
B.  $A = \frac{1}{2}(5 + 12) \cdot 9.1 = 77.4 \text{ cm}^2$

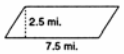
C.  $A = \frac{1}{2}(8.1 \cdot 14) = 56.7 \text{ yd}^2$


D.  $A = 3.14 \cdot (2.6)^2 = 21.2 \text{ m}^2$

E.  $A = 15.5 \cdot 21 = 325.5 \text{ mm}^2$

F.  $A = 4.25 \cdot 4.25 = 18.1 \text{ ft}^2$

G.  $A = \frac{10 \cdot 23 \cdot \frac{1}{2}}{1} = 115 \text{ in}^2$

H.  $A = 2.5 \cdot 7.5 = 18.8 \text{ mi}^2$

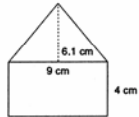
I.  $A = 3.14 \cdot (6.6)^2 = 136.8 \text{ cm}^2$

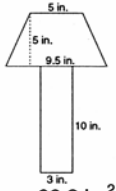
Page 45

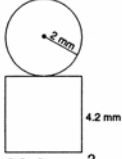
Name _____ Area _____

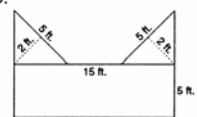
Total Area

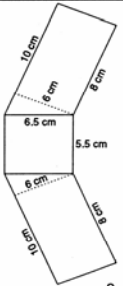
Find the total area of each figure. Round your answers to the nearest tenth. Write your answers in square units.

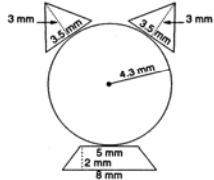
A.  $A = 63.5 \text{ cm}^2$

B.  $A = 66.3 \text{ in}^2$

C.  $A = 30.2 \text{ mm}^2$

D.  $A = 85 \text{ ft}^2$

E.  $A = 143.8 \text{ cm}^2$

F.  $A = 81.6 \text{ mm}^2$

Page 46

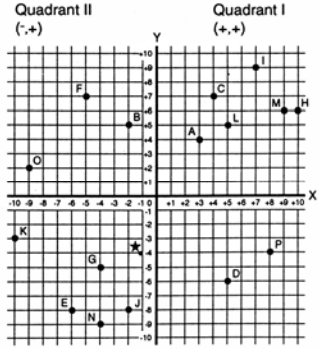
Name _____ Coordinate graphing _____

Graphing in Four Quadrants

To graph an ordered pair, start at the origin, (0, 0). Move x units right or left. Then move y units up or down.

The ★ is at point (-1, -4). Since both numbers are negative (-), it is in Quadrant III.

To plot this point, you would
Start at the origin.
Move 1 unit to the left.
Move 4 units down.



Draw and label each point at the given location.

A. (3,4) B. (-2,5) C. (4,7) D. (5,6)

E. (-6,8) F. (-5,7) G. (-4,5) H. (10,6)

I. (7,9) J. (-2,8) K. (-10,-3) L. (5,5)

M. (9,6) N. (-4,-9) O. (-9,2) P. (8,-4)

Draw and label a point in each quadrant. Write the location of each point.

Quadrant I Quadrant II Quadrant III Quadrant IV

Q Answers vary. R Answers vary. S Answers vary. T Answers vary.

Page 47

Name _____ Segment midpoints _____

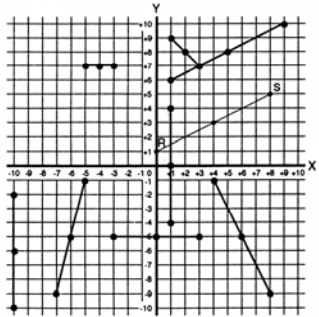
Finding Midpoints

\overline{RS} has endpoints (0,1) and (8,5).

The midpoint of \overline{RS} is the point that is halfway between the endpoints.

To calculate the midpoint of \overline{RS} :

- Find the average of the x values. $\frac{0 + 8}{2} = \frac{8}{2} = 4$
The x value of the midpoint is 4.
- Find the average of the y values. $\frac{1 + 5}{2} = \frac{6}{2} = 3$
The y value of the midpoint is 3.
- The midpoint of \overline{RS} is (4,3).



Plot the endpoints of each line segment. Draw the line segment on the graph. Calculate the midpoint. Plot it on the graph.

Segment	Endpoint	Endpoint	Workspace	Midpoint
1. \overline{AB}	A (1,9)	B (3,7)	$\frac{1+3}{2} = 2$ $\frac{9+7}{2} = 8$	(2, 8)
2. \overline{CD}	C (-3,7)	D (5,7)	$\frac{-3+5}{2} = -1$ $\frac{7+7}{2} = 7$	(-1, 7)
3. \overline{EF}	E (-5,-1)	F (-7,9)	$\frac{-5-7}{2} = -6$ $\frac{-1+9}{2} = 4$	(-6, 4)
4. \overline{GH}	G (4,-1)	H (8,-9)	$\frac{4+8}{2} = 6$ $\frac{-1-9}{2} = -5$	(6, -5)
5. \overline{IJ}	I (1,6)	J (9,10)	$\frac{1+9}{2} = 5$ $\frac{6+10}{2} = 8$	(5, 8)
6. \overline{KL}	K (-3,-5)	L (3,-5)	$\frac{-3+3}{2} = 0$ $\frac{-5-5}{2} = -5$	(0, -5)
7. \overline{MN}	M (1,4)	N (1,-4)	$\frac{1+1}{2} = 1$ $\frac{4-4}{2} = 0$	(1, 0)
8. \overline{OP}	O (-10,-2)	P (-10,-10)	$\frac{-10-10}{2} = -10$ $\frac{-2-10}{2} = -6$	(-10, -6)

Page 48

Using a Ratio to Find Slope

You can describe the **slope** (steepness) of a line by using the ratio of the **rise** to the **run** of any two points on the line.

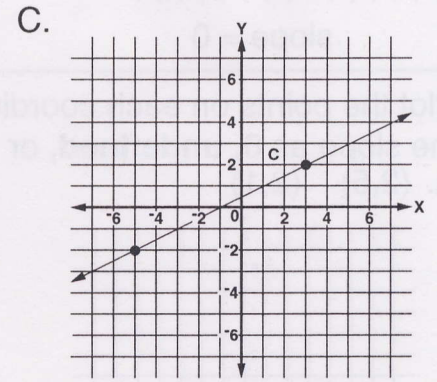
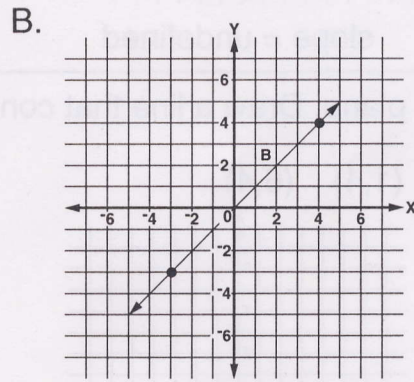
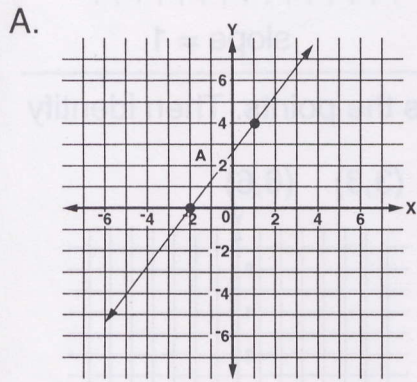
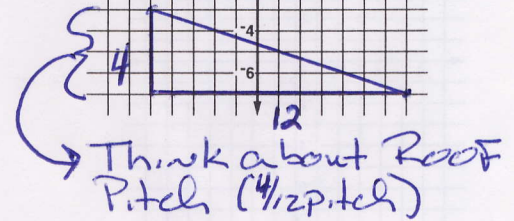
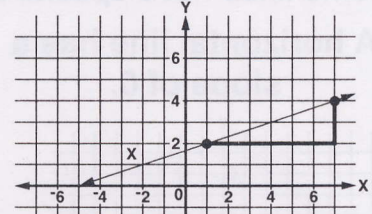
To find the rise: Count the units up or down between the points.
(In the diagram at the right, the rise is 2 units.)

To find the run: Count the units right or left between the points.
(In the diagram at the right, the run is 6 units.)

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{2}{6} = \frac{1}{3}$$

The slope of line X = $\frac{1}{3}$

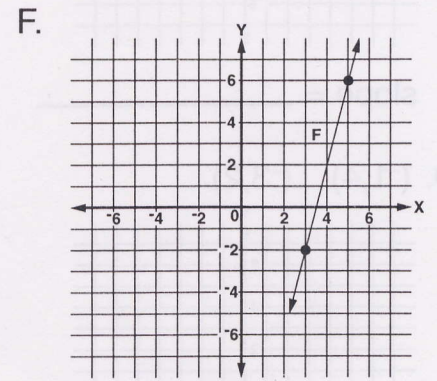
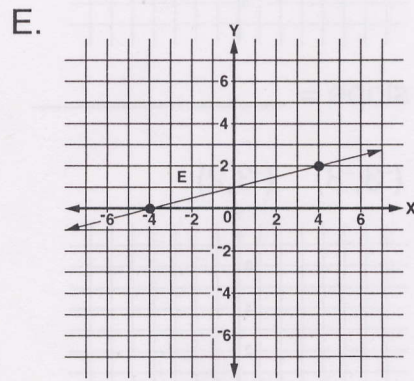
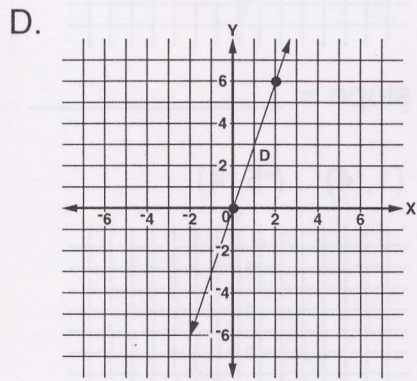
Write a ratio to describe the slope of each line.



slope = $\frac{4}{3}$

slope = $\frac{7}{7} = 1$

slope = $\frac{4}{8} = \frac{1}{2}$



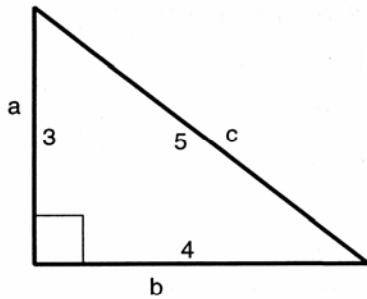
slope = $\frac{6}{2} = \frac{3}{1}$

slope = $\frac{2}{8} = \frac{1}{4}$

slope = $\frac{8}{2} = \frac{4}{1}$

G. How are slopes that are greater than one different from slopes that are less than one?

The Pythagorean Theorem



In a right triangle, the square of the length of the hypotenuse (the longest side) is equal to the sum of the squares of the lengths of the legs (the shorter sides).

In the diagram at the left, $a = 3$, $b = 4$, $c = 5$.

$$\begin{aligned} a^2 + b^2 &= c^2 \\ 3^2 + 4^2 &= 5^2 \\ 9 + 16 &= 25 \end{aligned}$$

Use the Pythagorean Theorem to find the unknown measurement for each triangle.

A.

$$\begin{aligned} 5^2 + 12^2 &= C^2 \\ 25 + 144 &= C^2 \\ C^2 &= 169 \\ \sqrt{C^2} &= \sqrt{169} \\ c &= 13 \end{aligned}$$

B.

$$c = \underline{\hspace{2cm}}$$

C.

$$c = \underline{\hspace{2cm}}$$

D.

$$c = \underline{\hspace{2cm}}$$

E.

$$c = \underline{\hspace{2cm}}$$

F.

$$c = \underline{\hspace{2cm}}$$

G.

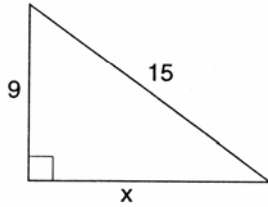
$$c = \underline{\hspace{2cm}}$$

H.

$$c = \underline{\hspace{2cm}}$$

Find the Missing Measure

The Pythagorean Theorem states that the square of the hypotenuse is equal to the sum of the squares of the legs. Use the formula $a^2 + b^2 = c^2$, where a and b are the legs and c is the hypotenuse.



$$x^2 + 9^2 = 15^2$$

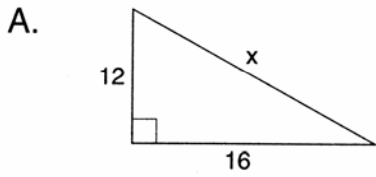
$$x^2 + 81 = 225$$

$$x^2 = 225 - 81$$

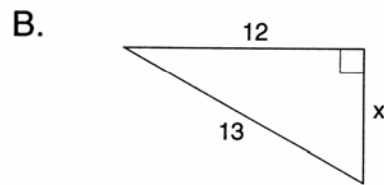
$$x^2 = 144$$

$$x = \sqrt{144} \text{ so } x = 12$$

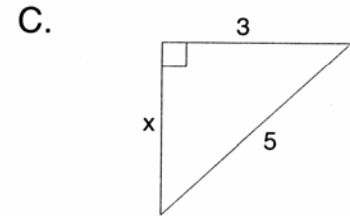
Use the Pythagorean Theorem to find X. You may use a calculator if you wish.



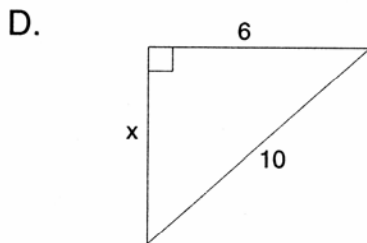
X = _____



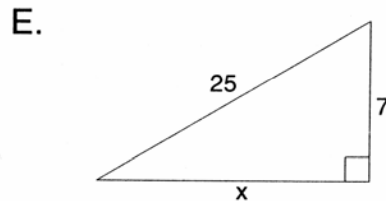
X = _____



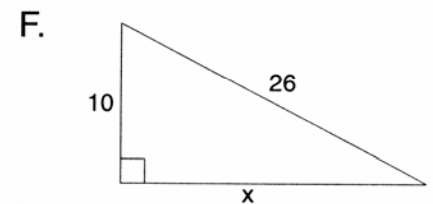
X = _____



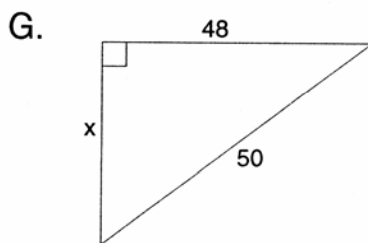
X = _____



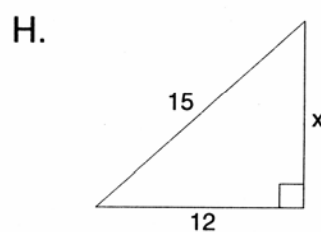
X = _____



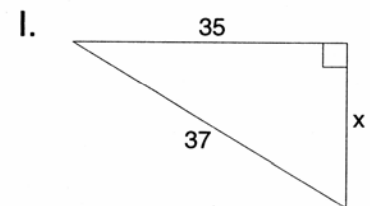
X = _____



X = _____



X = _____



X = _____

Answer Key

Name _____ Right triangles

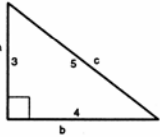
The Pythagorean Theorem

In a right triangle, the square of the length of the hypotenuse (the longest side) is equal to the sum of the squares of the lengths of the legs (the shorter sides).

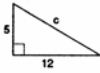







In the diagram at the left, $a = 3$, $b = 4$, $c = 5$.

$$a^2 + b^2 = c^2$$

$$3^2 + 4^2 = 5^2$$

$$9 + 16 = 25$$


Use the Pythagorean Theorem to find the unknown measurement for each triangle.

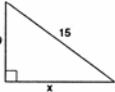
<p>A.</p>  $5^2 + 12^2 = c^2$ $25 + 144 = c^2$ $c^2 = 169$ $\sqrt{c^2} = \sqrt{169}$ $c = 13$	<p>B.</p>  $c = 15$
<p>C.</p>  $c = 35$	<p>D.</p>  $c = 17$
<p>E.</p>  $c = 10$	<p>F.</p>  $c = 0.5$
<p>G.</p>  $c = 26$	<p>H.</p>  $c = 34$

Page 77

Name _____ Right triangles

Find the Missing Measure

The Pythagorean Theorem states that the square of the hypotenuse is equal to the sum of the squares of the legs. Use the formula $a^2 + b^2 = c^2$, where a and b are the legs and c is the hypotenuse.



$$x^2 + 9^2 = 15^2$$

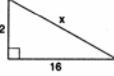
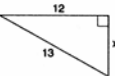


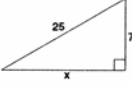
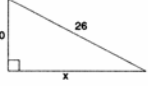
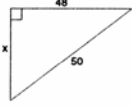

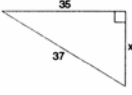
$$x^2 + 81 = 225$$

$$x^2 = 225 - 81$$

$$x^2 = 144$$

$$x = \sqrt{144} \text{ so } x = 12$$

Use the Pythagorean Theorem to find X. You may use a calculator if you wish.

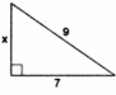

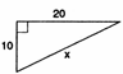



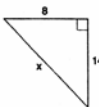

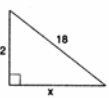
<p>A.</p>  $x = 20$	<p>B.</p>  $x = 5$	<p>C.</p>  $x = 4$
<p>D.</p>  $x = 8$	<p>E.</p>  $x = 24$	<p>F.</p>  $x = 24$
<p>G.</p>  $x = 14$	<p>H.</p>  $x = 9$	<p>I.</p>  $x = 12$

Page 78

Name _____ Right triangles

Use the Pythagorean Theorem

Find the value of X for each diagram. Use the formula $a^2 + b^2 = c^2$. Show each step. Use a calculator and round your answers to the nearest hundredth.


<p>A.</p>  $x = 5.66$	<p>B.</p>  $x = 38.97$	<p>C.</p>  $x = 22.36$
<p>D.</p>  $x = 4.47$	<p>E.</p>  $x = 6.71$	<p>F.</p>  $x = 45$
<p>G.</p>  $x = 16.12$	<p>H.</p>  $x = 16.97$	<p>I.</p>  $x = 13.42$

Page 79

Name _____ Right triangles

Mixed Practice With Right Triangles

Make a sketch for each problem. Use the formula $a^2 + b^2 = c^2$ to solve each problem. You may use a calculator. Round your answers to the nearest hundredth and circle them.

<p>A. A right triangle has a hypotenuse of 26. The length of one leg is 15. What is the length of the other leg?</p>  <p style="text-align: center;">21.24</p>	<p>B. A triangle has a short leg with a length of 9. The other leg is twice as long. How long is the hypotenuse?</p> <p style="text-align: center;">20.12</p>
<p>C. The legs of a right triangle measure 12 and 16. What is the length of the hypotenuse?</p> <p style="text-align: center;">20</p>	<p>D. The hypotenuse of a right triangle is 17. One leg measures 15. What is the length of the other leg?</p> <p style="text-align: center;">8</p>
<p>E. A triangular sail is 82 feet high. Its width is 29 feet. What is the length of the sail's hypotenuse?</p> <p style="text-align: center;">86.98</p>	<p>F. A 25-foot ladder is leaning against a wall. It forms the hypotenuse of a right triangle. The bottom of the ladder is 6 feet from the wall. How far up the wall will the ladder reach?</p> <p style="text-align: center;">24.27</p>
<p>G. Both legs of a right triangle measure 3. What is the length of the hypotenuse?</p> <p style="text-align: center;">4.24</p>	

Page 80

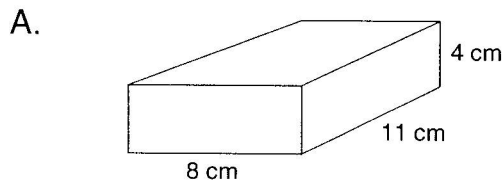
Volume: Mixed Practice

Find the volume of each figure. You may use a calculator. Round your answers to the nearest hundredth.

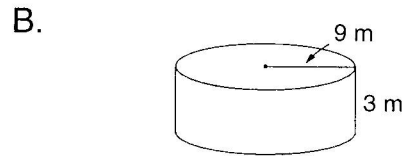
The volume of a prism or cylinder is **Base • height.**

The volume of a pyramid or cone is $\frac{1}{3} \cdot \mathbf{Base} \cdot \mathbf{height.}$

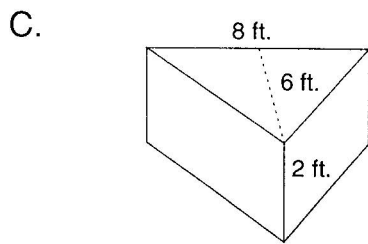
Remember! **Base** means the area of the base.



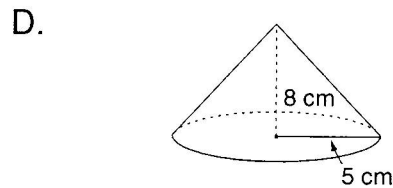
V = _____



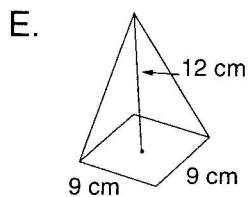
V = _____



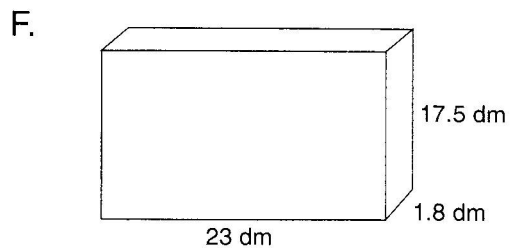
V = _____



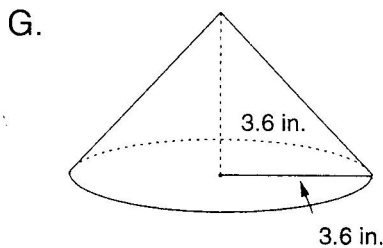
V = _____



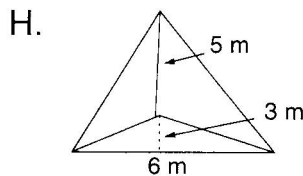
V = _____



V = _____



V = _____

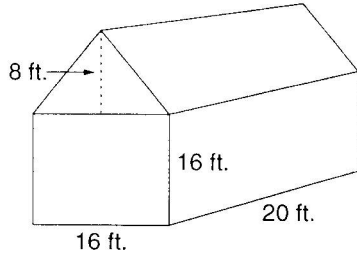


V = _____

Total Volume

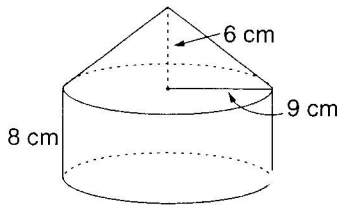
To find the total volume for the figures pictured, find the volume of each solid figure that makes up the figure. Then add the volumes. You may use a calculator. Record each formula that you use and the total volume in the space beside the diagram.

A.



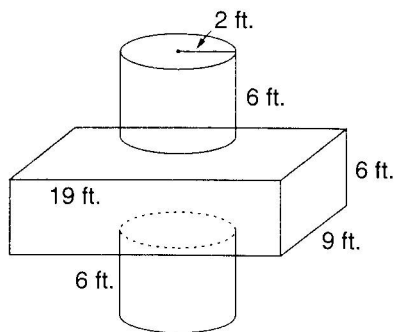
V = _____

B.



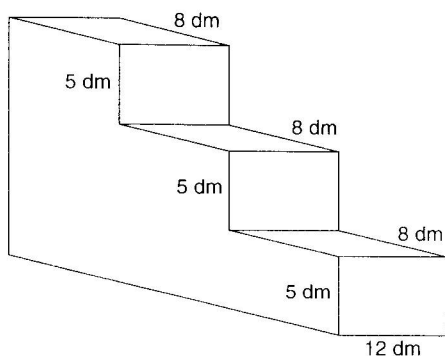
V = _____

C.



V = _____

D.



V = _____

Answer Key

Name _____ Volume _____

Volume of a Cylinder

To find the volume of a cylinder, use the formula $\text{Volume} = \text{Base} \cdot \text{height}$, where B is the area of the base and h is the height.

Step #1 Find the Area of the Base
 $B = \pi r^2$
 $B = 3.14 \cdot 3^2$
 $B = 28.26 \text{ m}^2$

Step #2 Find the Volume
 $\text{Volume} = \text{Base} \cdot \text{height}$
 $V = 28.26 \cdot 2$
 $V = 56.52 \text{ m}^3$

Find the volume of each cylinder. Use the formula $V = B \cdot h$. Use a calculator to help you. Round your answers to the nearest hundredth.

A. $V = 141.3 \text{ ft}^3$

B. $V = 16.84 \text{ in}^3$

C. $V = 359.12 \text{ yd}^3$

D. $V = 1,130.4 \text{ cm}^3$

E. $V = 97,641.44 \text{ m}^3$

F. $V = 401.92 \text{ in}^3$

G. $V = 19.44 \text{ m}^3$

H. $V = 7.22 \text{ cm}^3$

I. $V = 19.44 \text{ m}^3$

Page 93

Name _____ Volume _____

Volume of a Cone

To find the volume of a cone, use the formula $\text{Volume} = \frac{1}{3} \cdot \text{Base} \cdot \text{height}$, where B is the area of the base and h is the height of the cone.

Step #1 Find the Area of the Base
 $B = \pi r^2$
 $B = 3.14 \cdot 5^2$
 $B = 78.5 \text{ in}^2$

Step #2 Find the Volume
 $V = \frac{1}{3} \cdot \text{Base} \cdot \text{height}$
 $V = \frac{1}{3} \cdot 78.5 \cdot 12$
 $V = 314 \text{ in}^3$

Find the volume of each cone. Use the formula $V = \frac{1}{3} B \cdot h$. Use a calculator to help you. Round your answers to the nearest hundredth.

A. $V = 12.56 \text{ cm}^3$

B. $V = 602.88 \text{ cm}^3$

C. $V = 10.85 \text{ m}^3$

D. $V = 847.8 \text{ cm}^3$

E. $V = 65.42 \text{ ft}^3$

F. $V = 392.5 \text{ yd}^3$

G. $V = 45.79 \text{ m}^3$

H. $V = 494.88 \text{ ft}^3$

I. $V = 494.88 \text{ ft}^3$

Page 94

Name _____ Volume _____

Volume: Mixed Practice

Find the volume of each figure. You may use a calculator. Round your answers to the nearest hundredth.

The volume of a prism or cylinder is $\text{Base} \cdot \text{height}$.
 The volume of a pyramid or cone is $\frac{1}{3} \cdot \text{Base} \cdot \text{height}$.
 Remember! Base means the area of the base.

A. $V = 352 \text{ cm}^3$

B. $V = 763.02 \text{ m}^3$

C. $V = 209.33 \text{ cm}^3$

D. $V = 48 \text{ ft}^3$

E. $V = 324 \text{ cm}^3$

F. $V = 724.5 \text{ dm}^3$

G. $V = 48.83 \text{ in}^3$

H. $V = 15 \text{ m}^3$

I. $V = 48.83 \text{ in}^3$

Page 95

Name _____ Volume _____

Total Volume

To find the total volume for the figures pictured, find the volume of each solid figure that makes up the figure. Then add the volumes. You may use a calculator. Record each formula that you use and the total volume in the space beside the diagram.

A. $V = 6,400 \text{ ft}^3$

B. $V = 2,543.4 \text{ cm}^3$

C. $V = 1,176.72 \text{ ft}^3$

D. $V = 2,880 \text{ dm}^3$

Page 96

Name _____ Slope _____

Graphing Points and Lines

A line can be graphed from as few as two points. The line shown connects the points (1, 1) and (2, 3).

Plot the points on each dot diagram. Then draw a line that connects the points.

A. (0, 0) (3, 4) (1, 2) (3, 4) (2, 1) (4, 4) (1, 3) (4, 3)

B. (3, 3) (3, 4) (1, 2) (1, 4) (1, 2) (1, 4) (4, 3) (0, 2)

C. (1, 4) (4, 1) (4, 3) (0, 2) (1, 0) (0, 4)

Page 97

Name _____ Slope _____

Graphing Lines on a Coordinate Plane

A line can be graphed from any two points on a coordinate plane. Points (0, 1) and (5, 8) are plotted on the graph at the right. The points are connected by a line.

Plot the points on each coordinate plane. Draw a line that connects the points.

A. (3, 5) (4, 6) (2, 2) (2, 2) (1, 5) (1, 3)

B. (5, 1) (1, 5) (3, 4) (0, 0) (3, 1) (0, 5)

Page 98