
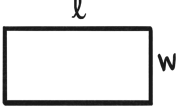
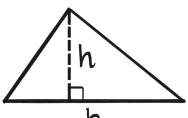
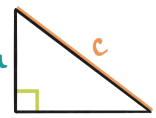
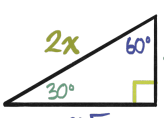
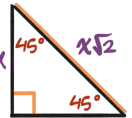
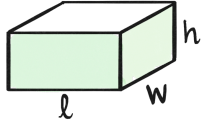


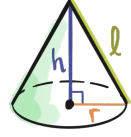
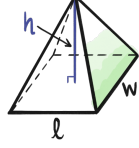
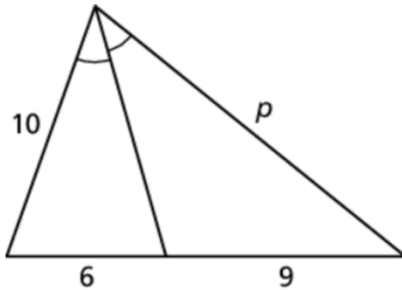


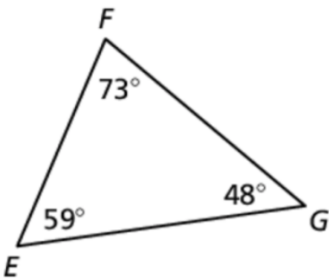
DIRECTIONS Show all work neatly organized that leads to the solution in order to receive full credit. Be sure to **simplify**, check, and **box your answers**. (Covers Chapters 6-11)

 $A = \pi r^2$ $C = 2\pi r$	 $A = lw$	 $A = \frac{1}{2}bh$	 $c^2 = a^2 + b^2$		
Special Right Triangles					
 $V = lwh$ $S = 2(lw + wh + hl)$	 $V = \pi r^2 h$ $S = 2\pi r^2 + 2\pi rh$	 $V = \frac{4}{3}\pi r^3$ $S = 4\pi r^2$	 $V = \frac{1}{3}\pi r^2 h$ $S = \pi r^2 + \pi rl$	 $V = \frac{1}{3}lwh$ $S = wl + 4 \text{ triangles}$	

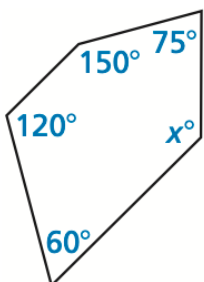
1 Find the value of the variable.



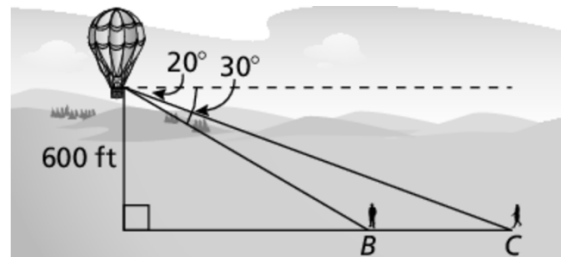
2 List the sides from shortest to longest.



3 Find the value of x of the given polygon.



4 You are in a hot air balloon that is 600 feet above the ground. You can see two people. The angles of depression to person B and person C are 30° and 20° , respectively.

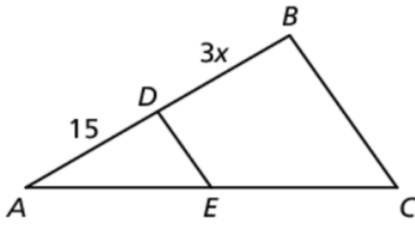


a. How far is person B from the point on the ground below the hot air balloon?

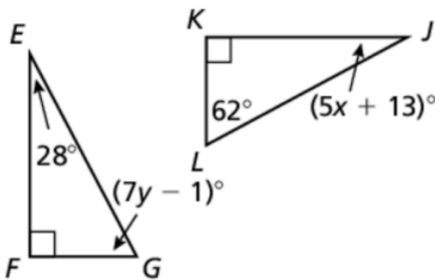
b. How far is person C from the point on the ground below the hot air balloon?

c. How far apart are the two people?

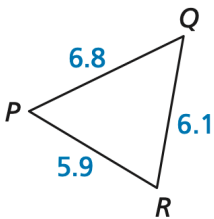
- 5 \overline{DE} is a midsegment of $\triangle ABC$.
Find the value of x .



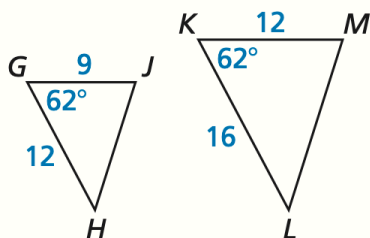
- 6 Find the value of x & y .
 $\triangle EFG \cong \triangle JKL$



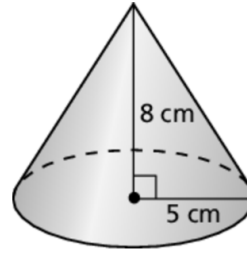
- 7 List the ANGLES in order from least to greatest.



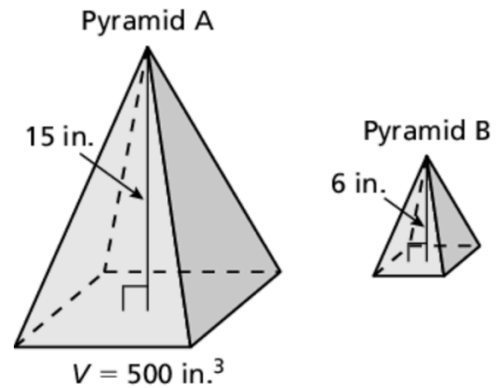
- 8 Determine whether the triangles are similar.
If they are, find the scale factor of $\triangle GHJ$ to $\triangle KLM$.



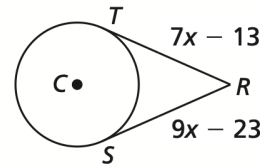
- 9 Find the surface area & volume of the solid.



- 10 The solids are similar. Find volume of solid B.

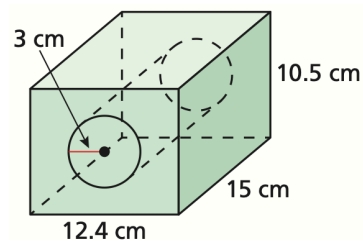


- 11 \overline{RS} is tangent to $\odot C$ at S , and \overline{RT} is tangent to $\odot C$ at T . Find the length of \overline{RT} .

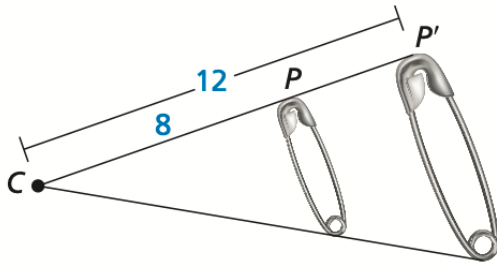


- A 5
- B 10
- C 22
- D 57

- 12 A cylindrical hole is drilled through a wooden block that is in the shape of a rectangular prism. Find the volume of the resulting solid.

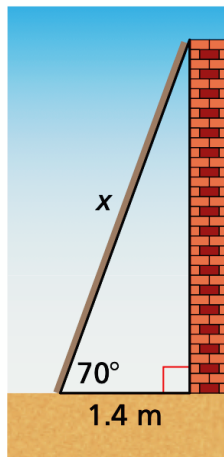


- 13 Find the **scale factor** of the dilation. Then tell whether it is a **reduction** or **enlargement**.

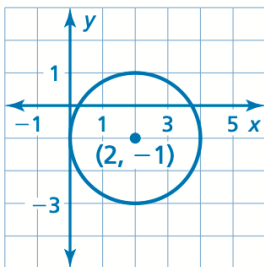


- A $k = \frac{2}{3}$ A *Enlargement*
 B $k = \frac{1}{2}$ B *Reduction*
 C $k = 2$
 D $k = \frac{3}{2}$

- 14 The *angle of elevation* of a ladder leaning against a wall is 70° . The *base of the ladder* is 1.4 meters from the base of the wall. **Find the length of the ladder** to the nearest tenth of a meter.

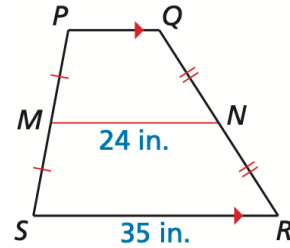


- 15 Write the **standard equation of the circle**.



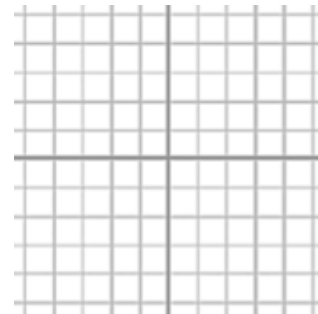
- A $(x + 2)^2 + (y - 1)^2 = 4$
 B $(x - 2)^2 + (y + 1)^2 = 4$
 C $(x + 2)^2 + (y - 1)^2 = 2$
 D $(x - 2)^2 + (y + 1)^2 = 2$

- 16 \overline{MN} is the midsegment of trapezoid $PQRS$. Find PQ .



- A $PQ = -23$
 B $PQ = 13$
 C $PQ = 15$
 D $PQ = 29.5$

- 17 Decide the **most specific name** for $\square ABCD$ with vertices are $A(-3, 4)$, $B(3, 3)$, $C(4, -3)$ and $D(-2, -2)$.

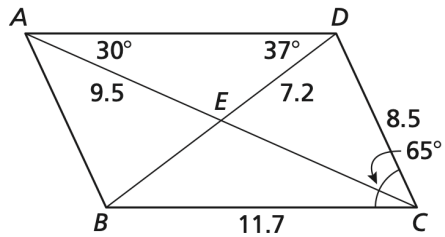


- A *parallelogram*
 B *rhombus*
 C *rectangle*
 D *square*

- 18 Do segments with lengths 11 feet, 13 feet, and 17 feet **form a triangle?** If so, **classify** the triangle as *acute*, *right*, or *obtuse*.

- A *Acute*
 B *Right*
 C *Obtuse*
 D *No Triangle*

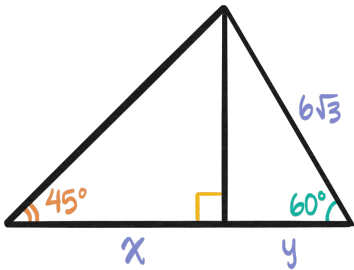
- 19 Use $\square ABCD$.



Find $m\angle ABC$.

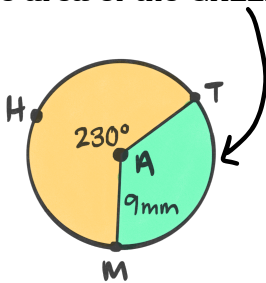
- A $m\angle ABC = 37^\circ$
- B $m\angle ABC = 78^\circ$
- C $m\angle ABC = 102^\circ$
- D $m\angle ABC = 115^\circ$

- 20 Find the values of x & y .



- A $x = 12, y = 6$
- B $x = 9, y = 3\sqrt{3}$
- C $x = 6, y = 3$
- D $x = 3\sqrt{3}, y = 9$

- 21 Find the area of the GREEN sector formed by $\angle MAT$.

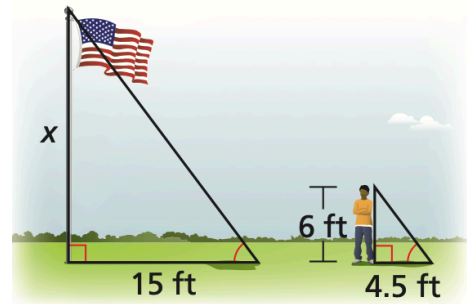


- A $\approx 254.47 \text{ mm}^2$
- B $\approx 162.58 \text{ mm}^2$
- C $\approx 91.89 \text{ mm}^2$
- D $\approx 20.42 \text{ mm}^2$

- 22 Let $\angle D, \angle E,$ and $\angle F$ be acute angles. Use a calculator to **approximate the measures of $\angle D, \angle E,$ and $\angle F$** to the nearest tenth of a degree.

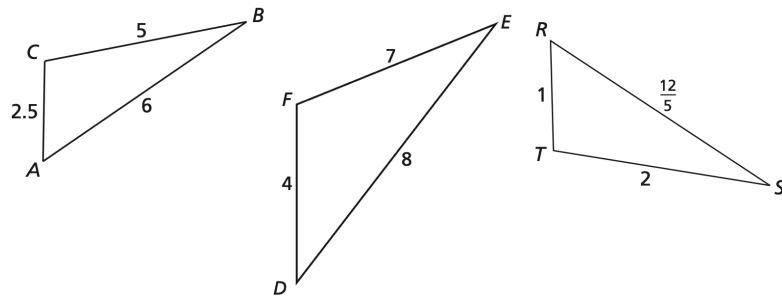
- a. $\tan D = 1.05$
- b. $\sin E = 0.66$
- c. $\cos F = 0.91$

- 23 **Are the triangles similar?** If so, which theorem supports your answer & what is the height of the flagpole?



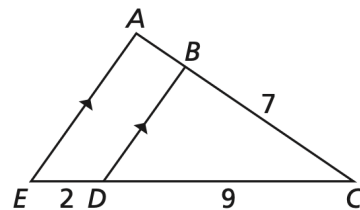
- A *Not Similar*
- B *Similar by SAS; $x = 12 \text{ ft}$*
- C *Similar by AA; $x = 18 \text{ ft}$*
- D *Similar by AA; $x = 20 \text{ ft}$*

- 24 Determine whether $\triangle DEF$ or $\triangle RST$ is similar to $\triangle ABC$.



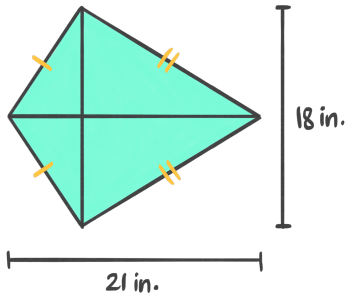
- A $\triangle DEF \sim \triangle ABC$
- B $\triangle RST \sim \triangle ABC$

- 25 In the diagram, $\overline{AE} \parallel \overline{BD}$, $BC = 7, CD = 9$ and $DE = 2$. Find AB .



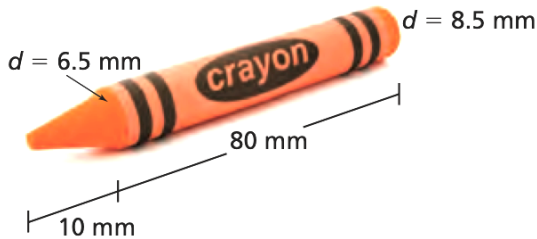
- A $AB = \frac{14}{9}$
- B $AB = \frac{7}{3}$
- C $AB = \frac{18}{7}$
- D $AB = \frac{9}{2}$

26 Find the **area of the kite**.

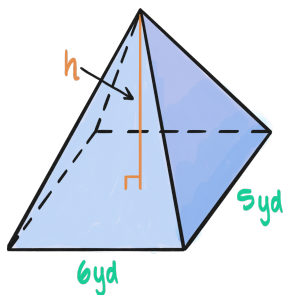


- A 189 in^2
- B 378 in^2
- C 178.5 in^2
- D 94.5 in^2

27 A crayon can be approximated by a composite solid made from a cylinder and a cone.
Find the **volume of a crayon**.



28 The **volume of the pyramid** is 80 cubic yards.
Find the **height of the pyramid**.



- A 7 yd
- B 8 yd
- C 9 yd
- D 27 yd

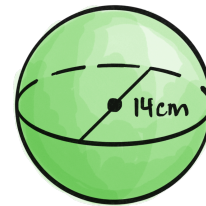
29 Match the **points of concurrency** to the **type of lines** that they intersect?

- | | |
|----------------|---------------------------|
| A Circumcenter | a Altitudes |
| B Incenter | b Angle Bisectors |
| C Centroid | c Medians |
| D Orthocenter | d Perpendicular Bisectors |

30 Convert the angle of 252° to **radians**.

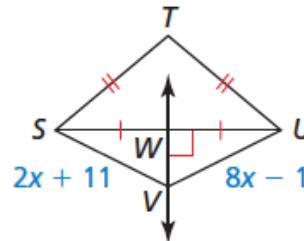
- A $\frac{25\pi}{18}$
- B $\frac{7\pi}{5}$
- C $\frac{7\pi}{10}$
- D $\frac{14\pi}{5}$

31 Find the **surface area & volume** of the sphere.



- A $S \approx 175.93 \text{ cm}^2$, $V \approx 821.00 \text{ cm}^3$
- B $S \approx 205.25 \text{ cm}^2$, $V \approx 1436.76 \text{ cm}^3$
- C $S \approx 615.75 \text{ cm}^2$, $V \approx 4310.27 \text{ cm}^3$
- D $S \approx 615.75 \text{ cm}^2$, $V \approx 1436.76 \text{ cm}^3$

32 Using the **Converse of the Perpendicular Bisector Theorem** find the length **UV**.



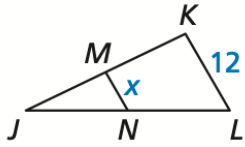
- A $UV = 2$
- B $UV = 13$
- C $UV = 15$
- D $UV = 17$

33 Where is the **orthocenter** for the triangle with the given vertices?

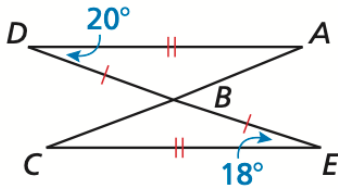
$$A(3, 5), B(-5, 3), C(-1, 1)$$

- A Inside
- B On the triangle
- C Outside

- 34 \overline{MN} is a midsegment of $\triangle JKL$.
Find the value of x .



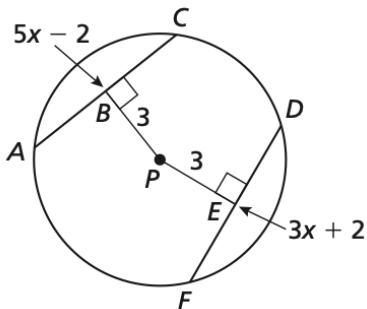
- 35 Complete the statement with $<$, $>$, or $=$.
 AB CB



- 36 Identify the center & radius.
 $x^2 + 4x + y^2 - 4y = 28$

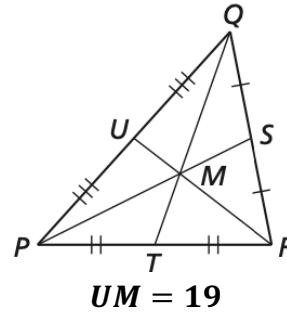
- A Center: $(2, -2)$; $r = 6$
 B Center: $(2, -2)$; $r = 36$
 C Center: $(-2, 2)$; $r = 36$
 D Center: $(-2, 2)$; $r = 6$

- 37 In $\odot P$, $BP = EP = 3$, $AC = 5x - 2$, and $FD = 3x + 2$. Find the radius of $\odot P$.



- A 2
 B 4
 C 5
 D 8

- 38 Let point M be the **centroid** of $\triangle PQR$. Use the given information to find MR .



- A $MR = 95$
 B $MR = 76$
 C $MR = 57$
 D $MR = 38$

- 39 Describe the possible lengths of the third side of the triangle given the lengths of the other two sides.

5 yds, 24 yds

- A $19\text{yds} < x < 29\text{yds}$
 B $5\text{ yds} \leq x \leq 24\text{yds}$
 C $11\text{yds} < x < 31\text{yds}$
 D $19\text{yds} \leq x \leq 29\text{yds}$

- 40 Find the value of x .

