

What can I use to study? ? ?

***OLD NOTES PACKETS**

***OLD TEST REVIEWS!**

***MIDTERM REVIEW!**

***THE BLOG (www.gervaismath.wordpress.com)**

***FRIENDS ALSO IN GEOMETRY**

***THE MATH LAB**

***MRS. GERVAIS**

***THE INTERNET (Khan's Academy / YouTube)**



Geometry B Semester Exam REVIEW

1. The measures of the angles of a triangle are in the extended ratio 2 : 6 : 10. What is the measure of the smallest angle?

$$2x + 6x + 10x = 180$$

$$\frac{18x}{18} = \frac{180}{18}$$

$$x = 10 \checkmark$$

$$2(10) = 20^\circ$$

2. What is the solution of the proportion?

$$\frac{5y - 8}{22} = \frac{y}{6}$$

$$6(5y - 8) = 22y$$

$$30y - 48 = 22y$$

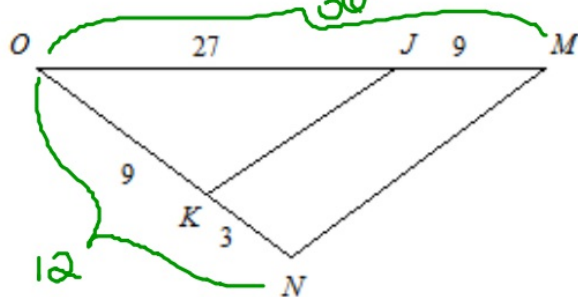
$$-30y \quad -30y$$

$$-48 = -8y$$

$$\frac{-48}{-8} = \frac{-8y}{-8}$$

$$y = 6$$

3. State whether the triangles are similar. If so, write a similarity statement and the postulate or theorem you used.

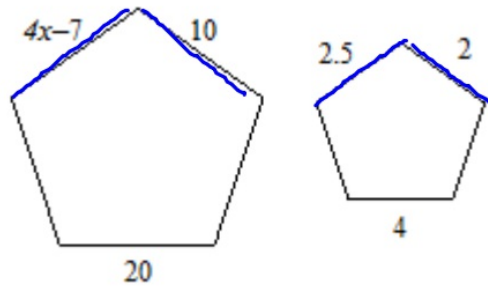


$$\frac{27}{36} = \frac{3}{4} \checkmark$$

$$\frac{9}{12} = \frac{3}{4} \checkmark$$

Yes! SAS ~

4. The polygons are similar, but not necessarily drawn to scale. Find the value of x .

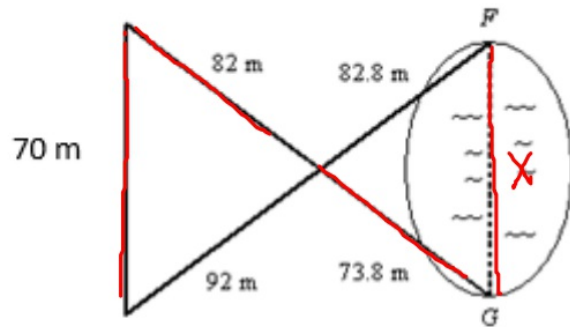


$$\frac{4x-7}{2.5} = \frac{10}{4}$$

$$\begin{aligned} 2(4x-7) &= 2.5(10) \\ 8x - 14 &= 25 \\ +14 &+14 \\ \hline 8x &= 39 \\ \frac{8x}{8} &= \frac{39}{8} \end{aligned}$$

$$x = 4.875$$

5. Campsites F and G are on opposite sides of a lake. A survey crew made the measurements shown on the diagram. What is the distance between the two campsites? The diagram is not to scale.

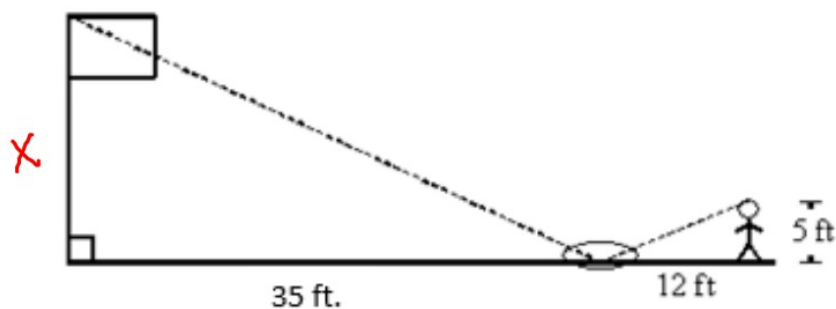


$$\frac{70}{x} = \frac{82}{73.8}$$

$$\frac{82x}{82} = \frac{5,796}{82}$$

$$x = 63m$$

6. Michele wanted to measure the height of her school's flagpole. She placed a mirror ~~48~~³⁵ feet from the flagpole, then walked backwards until she was able to see the top of the pole in the mirror. Her eyes were 5 feet above the ground and she was 12 feet from the mirror. Using similar triangles, find the height of the flagpole to the nearest tenth of a foot.

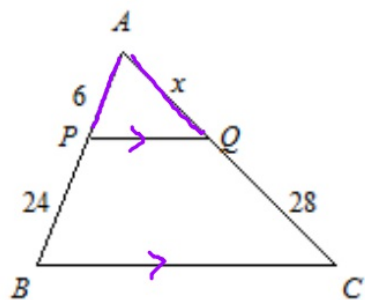


$$\frac{x}{35} \rightarrow \frac{5}{12}$$

$$12x = \frac{175}{12}$$

$$x = 14.58\bar{3}$$

7. What is the value of x , given that $\overline{PQ} \parallel \overline{BC}$?

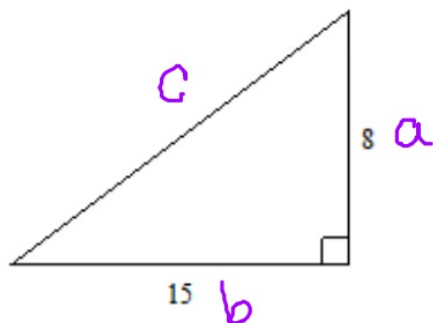


$$\frac{6}{x} \rightarrow \frac{24}{28}$$

$$24x = 168$$

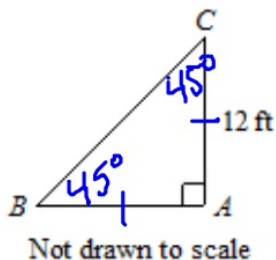
$$x = 7$$

8. Find the length of the missing side. The triangle is not drawn to scale.



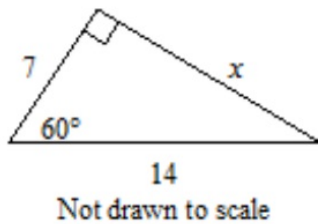
$$\begin{aligned} a^2 + b^2 &= c^2 \\ 8^2 + 15^2 &= c^2 \\ 64 + 225 &= c^2 \\ \sqrt{289} &= \sqrt{c^2} \\ \boxed{17} &= c \end{aligned}$$

9. In triangle ABC , $\angle A$ is a right angle and $m\angle B = 45^\circ$. Find BC . If your answer is not an integer, leave it in simplest radical form.



$$\begin{aligned} &\curvearrow 45-45-90 \\ &* \text{ hyp} = \sqrt{2} \cdot \text{leg} \\ &BC = \sqrt{2} \cdot 12 \\ &\boxed{BC = 12\sqrt{2}} \end{aligned}$$

10. Find the value of the variable(s). If your answer is not an integer, leave it in simplest radical form.



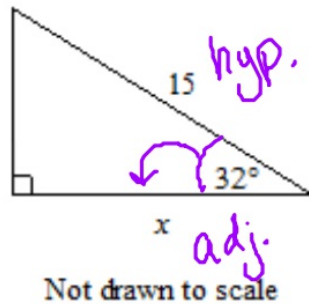
$$30-60-90$$

- * hyp = 2 · short
- * long = $\sqrt{3}$ · short

$$x = \sqrt{3} \cdot 7$$

$$x = 7\sqrt{3}$$

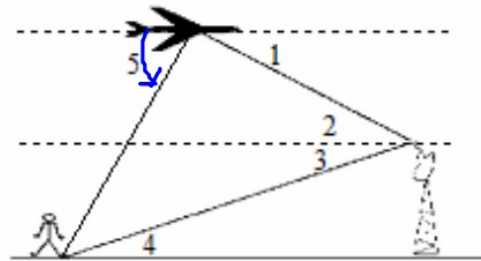
11. Find the value of x. Round to the nearest tenth.



$$15 \cdot \cos 32 = \frac{x}{15} \cdot 15$$

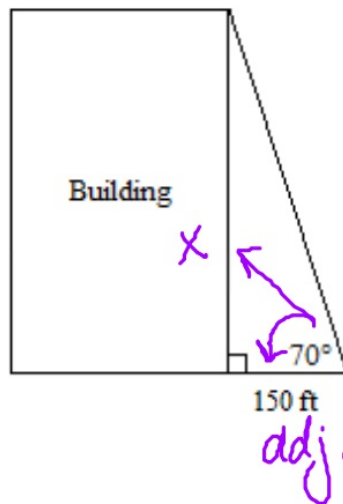
$$12.7 = x$$

12. What is the description of $\angle 5$ as it relates to the situation shown?



Angle of Depression

13. The students in Mr. Collin's class used a surveyor's measuring device to find the angle from their location to the top of a building. They also measured their distance from the bottom of the building. The diagram shows the angle measure and the distance. To the nearest foot, find the height of the building.

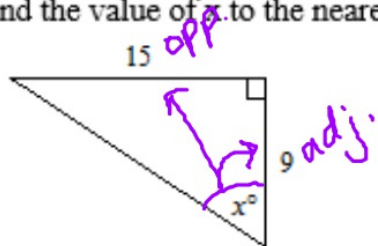


$$150 \cdot \tan 70 = \frac{x}{150} \cdot 150$$

$$412.12 = x$$

$$x = 412.12 \text{ ft.}$$

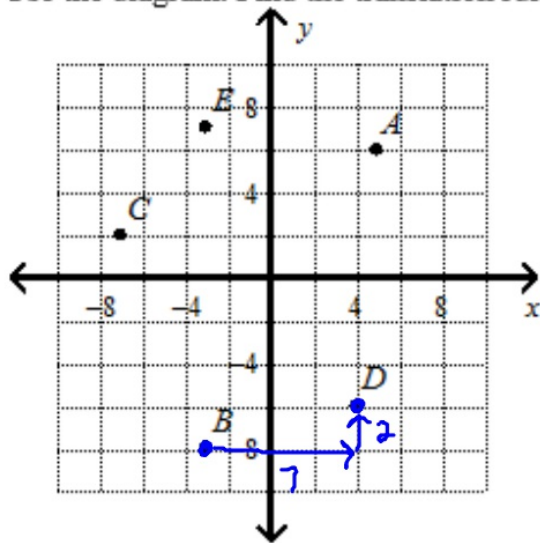
14. Find the value of x to the nearest degree.



Not drawn to scale

$$\tan X = \frac{15}{9}$$
$$\tan^{-1}\left(\frac{15}{9}\right) = \boxed{59^\circ}$$

15. Use the diagram. Find the translation rule that describes the translation $B \rightarrow D$.

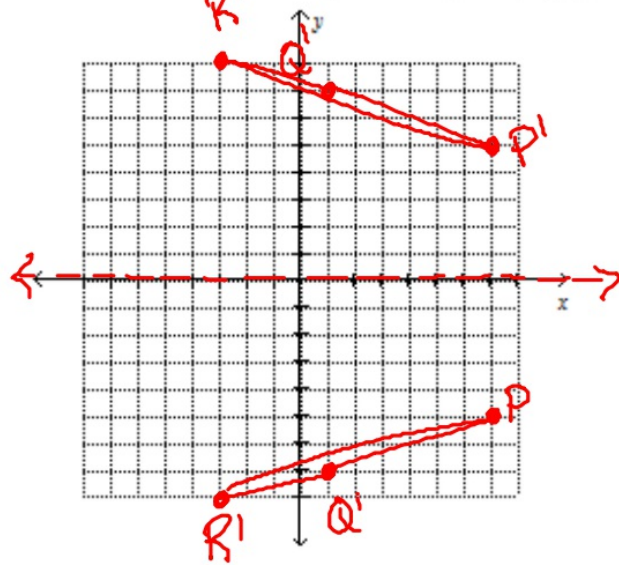


$$T_{\langle 7, 2 \rangle} B = D$$

16. What translation rule can be used to describe the result of the composition of $T_{\langle 1, -2 \rangle}(x, y)$ and $T_{\langle 4, 1 \rangle}(x, y)$?

$$T_{\langle 5, -1 \rangle}(x, y)$$

17. The vertices of a triangle are $P(7, -5)$, $Q(1, -7)$, and $R(-3, -8)$. Name the vertices of $R_{y=0}(\triangle PQR)$.



$$P(7, -5) \rightarrow P'(7, 5)$$

$$Q(1, -7) \rightarrow Q'(1, 7)$$

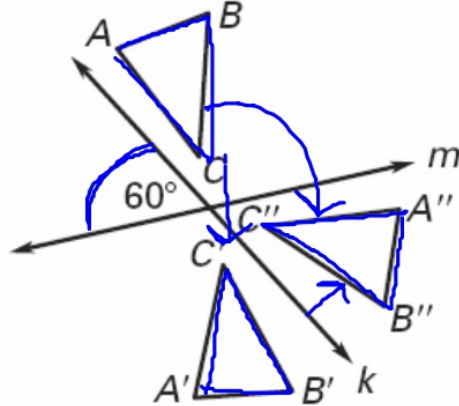
$$R(-3, -8) \rightarrow R'(-3, 8)$$

x-axis!
 $(x, y) \rightarrow (x, -y)$

Geometry B Exam Review Day 1

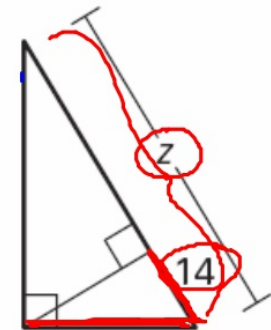
1. **Multiple Choice** Find the angle of rotation that maps $\triangle ABC$ onto $\triangle A''B''C''$.

- (A) 60°
- (B) 30°
- (C) 120°
- (D) 180°
- (E) None of these



2. **Multiple Choice** Find the value of z . Round to the nearest hundredth.

- (A) 42.68
- (B) 20.49
- (C) 64.29
- (D) 56.28
- (E) 62.30



$$\frac{30}{z} = \frac{14}{30}$$

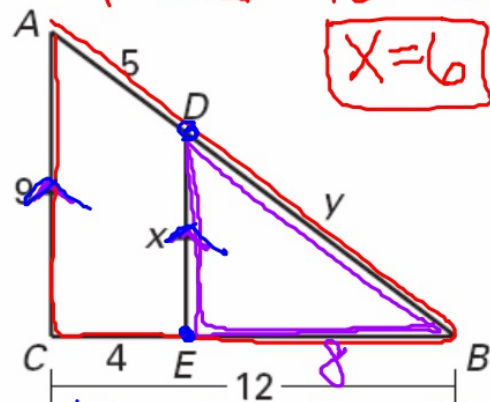
$$900 = 14z$$

$$\frac{900}{14} = \frac{14z}{14}$$

$$64.29 = z$$

3. **Multiple Choice** $\triangle ABC \sim \triangle DBE$. Find the values of x and y .

- (A) $x = 6$, $y = 10$
- (B) $x = 13\frac{1}{2}$, $y = 10$
- (C) $x = 6$, $y = 5$
- (D) $x = 13\frac{1}{2}$, $y = 5$
- (E) $x = 6$, $y = \frac{10}{3}$



$$\frac{x}{9} = \frac{14}{30}$$

$$\frac{12x}{12} = \frac{72}{12}$$

$$x = 6$$

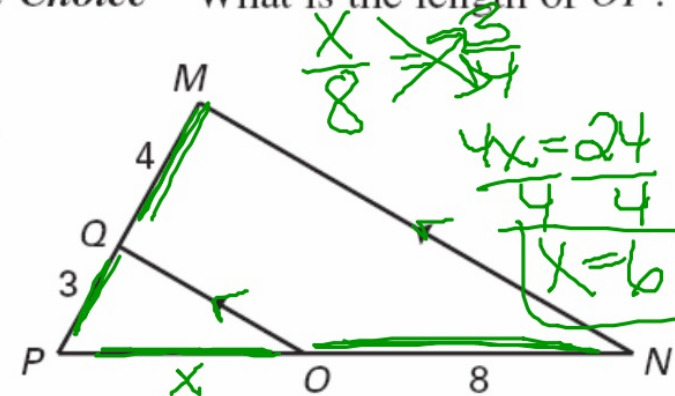
$$\frac{5}{12} = \frac{8}{4}$$

$$4y = 40$$

$$y = 10$$

4. **Multiple Choice** What is the length of \overline{OP} ?

- (A) 1.5
- (B) $10\frac{2}{3}$
- (C) 5
- (D) 6
- (E) $7\frac{1}{3}$



$$\frac{x}{8} = \frac{3}{4}$$

$$4x = 24$$

$$x = 6$$

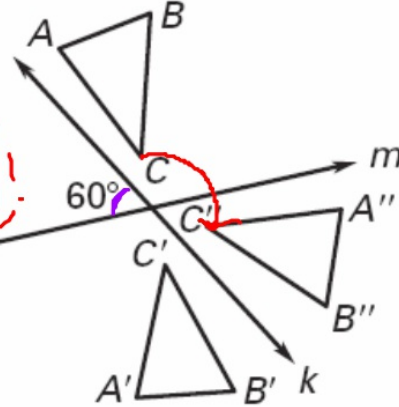
Geometry B Exam Review Day 1

Geometric Means!

1. **Multiple Choice** Find the angle of rotation that maps $\triangle ABC$ onto $\triangle A''B''C''$.

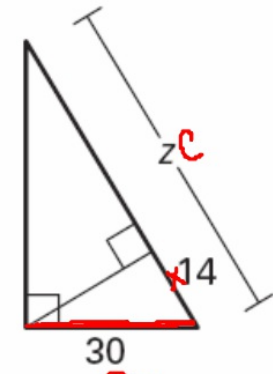
- (A) 60°
- (B) 30°
- (C) 120°
- (D) 180°
- (E) None of these

Double the angle!



2. **Multiple Choice** Find the value of z . Round to the nearest hundredth.

- (A) 42.68
- (B) 20.49
- (C) 64.29
- (D) 56.28
- (E) 62.30

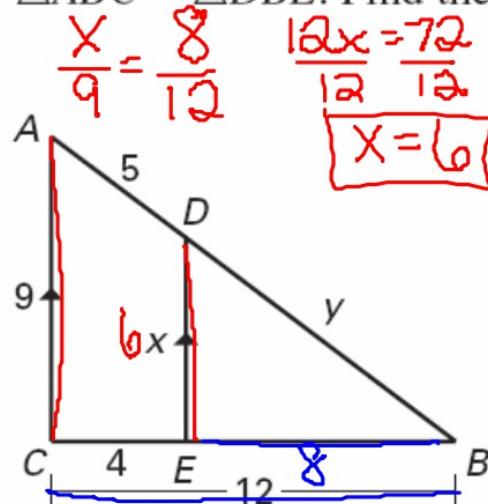


$$\frac{30}{14} = \frac{z}{30} \quad 14z = 900$$

$$z = 64.29$$

3. **Multiple Choice** $\triangle ABC \sim \triangle DBE$. Find the values of x and y .

- (A) $x = 6, y = 10$
- (B) $x = 13\frac{1}{2}, y = 10$
- (C) $x = 6, y = 5$
- (D) $x = 13\frac{1}{2}, y = 5$
- (E) $x = 6, y = \frac{10}{3}$

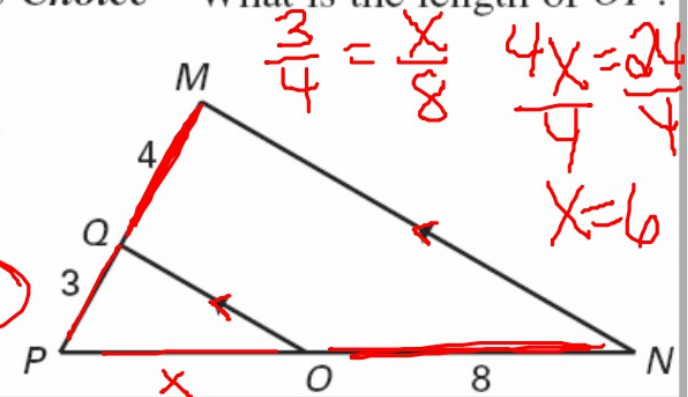


$$\frac{x}{9} = \frac{8}{12} \quad \frac{12x}{12} = \frac{72}{12} \quad x = 6$$

$$\frac{y}{5} = \frac{8}{4} \quad \frac{4y}{4} = \frac{40}{4} \quad y = 10$$

4. **Multiple Choice** What is the length of \overline{OP} ?

- (A) 1.5
- (B) $10\frac{2}{3}$
- (C) 5
- (D) 6
- (E) $7\frac{1}{3}$

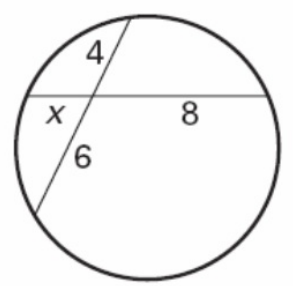


$$\frac{3}{4} = \frac{x}{8} \quad \frac{4x}{4} = \frac{24}{4} \quad x = 6$$

Geometry Exam Day 2 Warm-up / Review

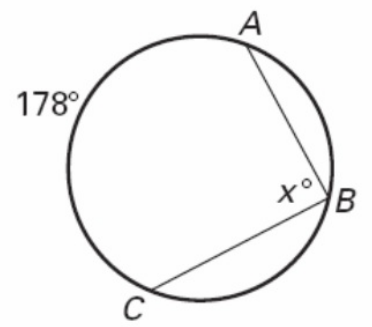
1. **Multiple Choice**
Find the value of x .

- (A) 3 (B) 4
- (C) 5 (D) 6
- (E) 8



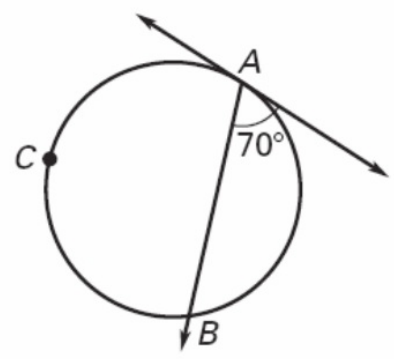
3. **Multiple Choice** Find the value of x .

- (A) 178 (B) 356
- (C) 89 (D) 182
- (E) 91



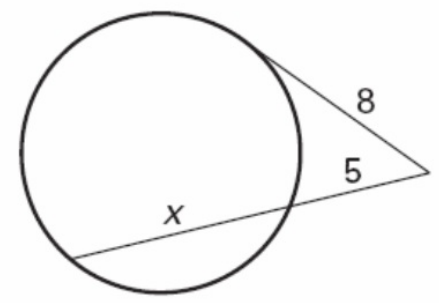
2. **Multiple Choice**
Find $m\widehat{AB}$.

- (A) 110° (B) 70°
- (C) 140° (D) 220°
- (E) 35°



4. **Multiple Choice**
Find the value of x .

- (A) 3.2 (B) 12.8
- (C) 4.9 (D) 7.8
- (E) 1.8

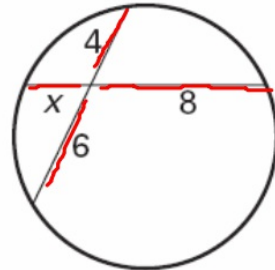


Geometry Exam Day 2 Warm-up / Review

1. Multiple Choice

Find the value of x .

- A 3 B 4
 C 5 D 6
 E 8

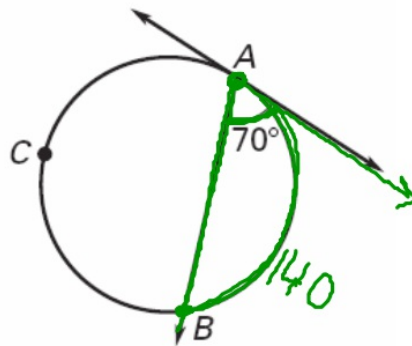


$$\begin{aligned}
 8x &= 4(6) \\
 8x &= 24 \\
 \frac{8x}{8} &= \frac{24}{8} \quad X=3
 \end{aligned}$$

2. Multiple Choice

Find $m\widehat{AB}$.

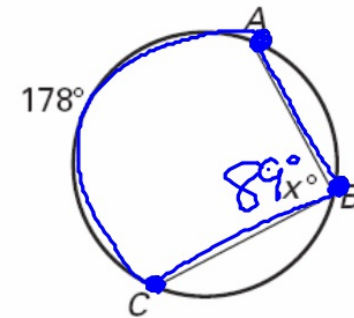
- A 110° B 70°
 C 140° D 220°
 E 35°



3. Multiple Choice

Find the value of x .

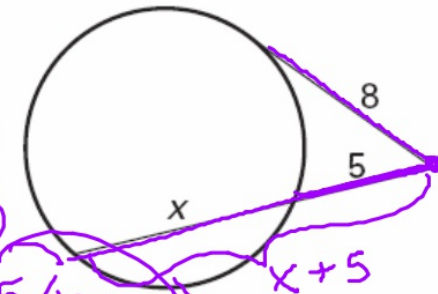
- A 178 B 356
 C 89 D 182
 E 91



4. Multiple Choice

Find the value of x .

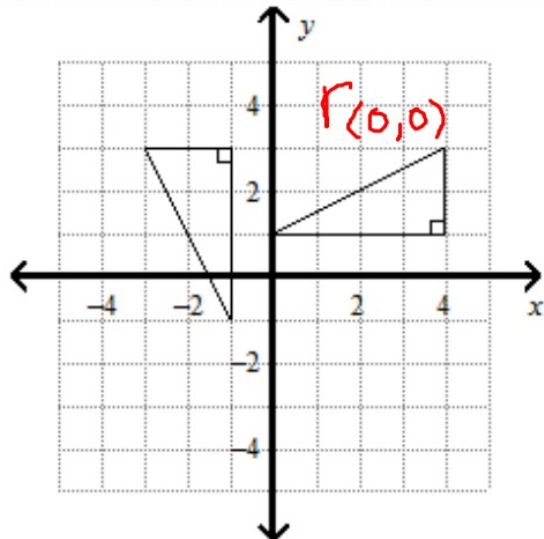
- A 3.2 B 12.8
 C 4.9 D 7.8
 E 1.8



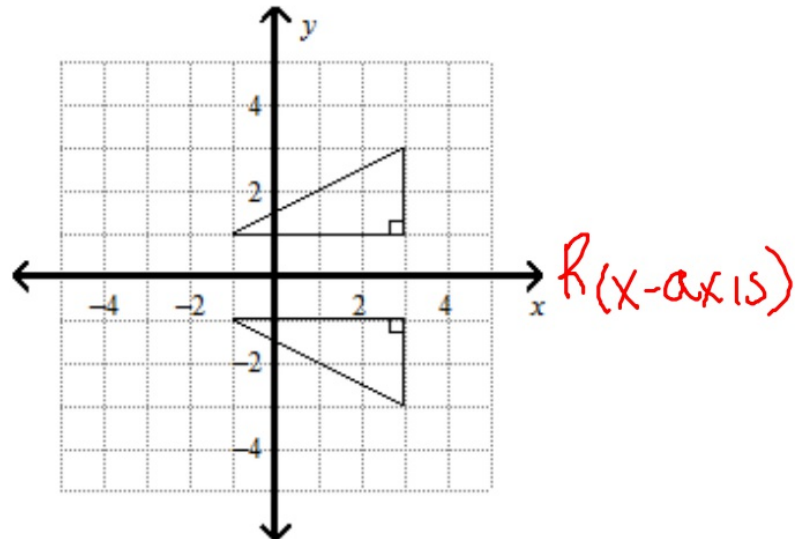
$$\begin{aligned}
 8(8) &= 5(x+5) \\
 64 &= 5x+25 \\
 -25 &\quad -25 \\
 \hline
 39 &= 5x \quad \boxed{X=7.8} \\
 \frac{39}{5} &= \frac{5x}{5}
 \end{aligned}$$

18. Describe the transformation shown in each image.

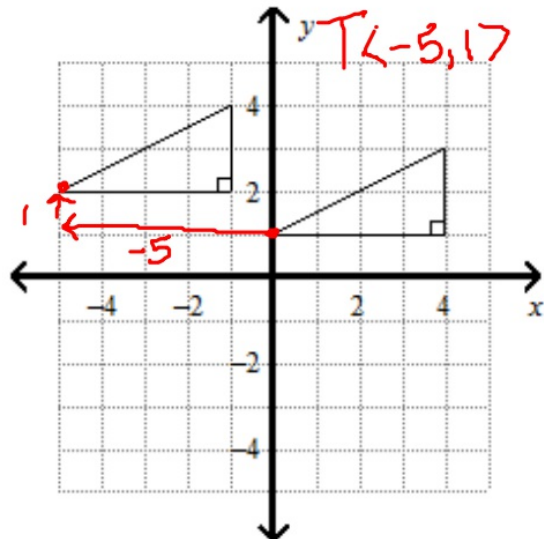
A.



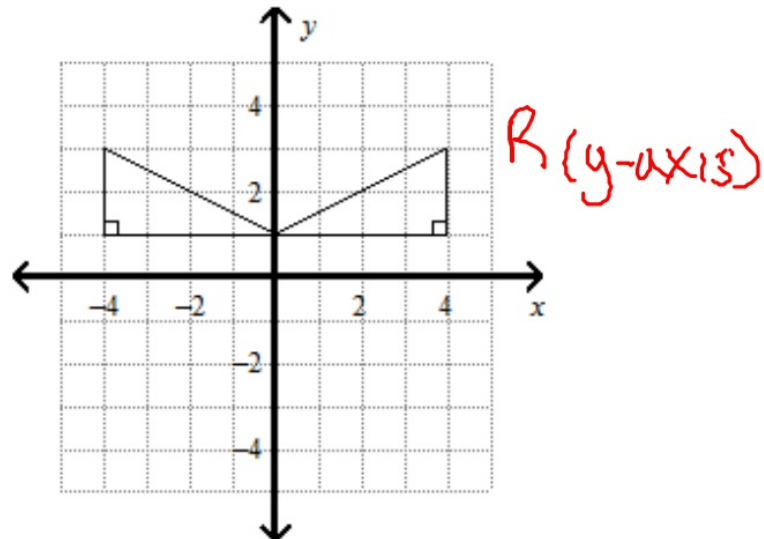
C.



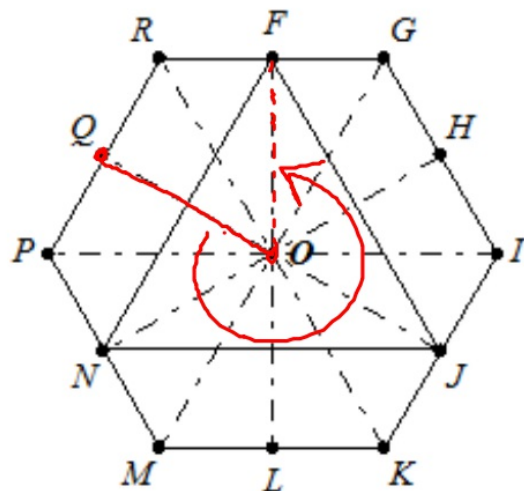
B.



D.



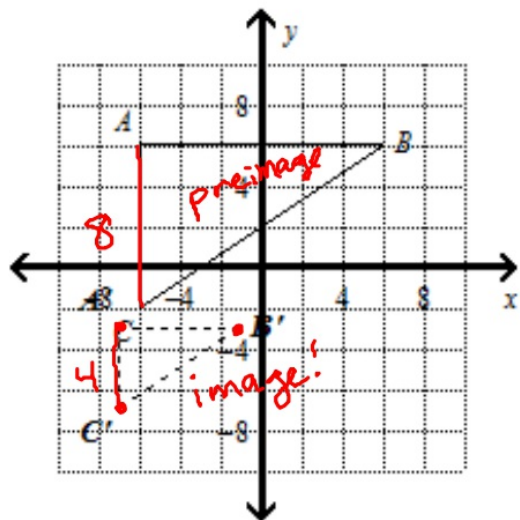
19. The hexagon GIKMPR and $\triangle FJN$ are regular. The dashed line segments form 30° angles.



Find $r_{(300^\circ, O)}(\overline{OQ})$. $\boxed{\overline{OF}}$

↑ ORDER MATTERS!

20. The dashed-lined figure is a dilation image of $\triangle ABC$ with center of dilation P (not shown). Is $D_{(n,P)}$ an enlargement, or a reduction? What is the scale factor n of the dilation?



Reduction!

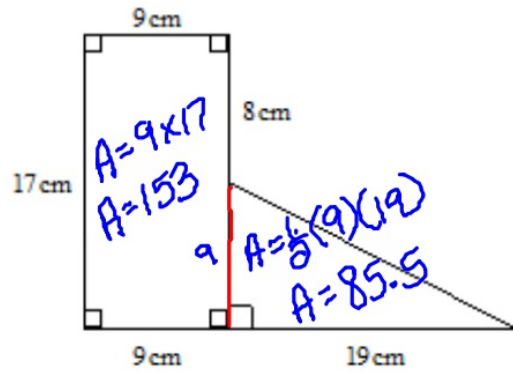
$$n = \frac{\text{image}}{\text{preimage}} = \frac{4}{8} = \boxed{\frac{1}{2}}$$

21. The zoom feature on a camera lens allows you dilate what appears on the display. When you change from 100% to 300%, the new image on your screen is an enlargement of the previous image with a scale factor of 3. If the new image is 6 millimeters wide, what was the width of the previous image?

$$\frac{x(3)}{3} = \frac{6\text{mm}}{3}$$

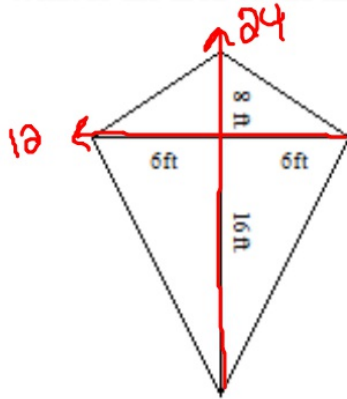
$$\boxed{x = 2\text{mm}}$$

22. Find the area. The figure is not drawn to scale.



$$A = 153 + 85.5$$
$$A = 238.5 \text{ cm}^2$$

23. What is the area of the kite?



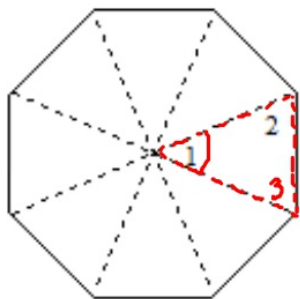
Not drawn to scale

$$A = \frac{1}{2} d_1 \cdot d_2$$

$$A = \frac{1}{2} (12)(24)$$

$$A = 144 \text{ ft}^2$$

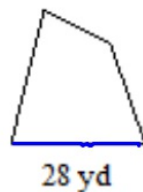
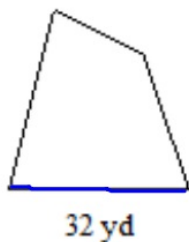
24. Given the regular polygon, find the measure of each numbered angle.



$$\frac{360}{8} = 45^\circ = \angle 1$$

$$\angle 2 = 180 - 45 = \frac{135^\circ}{2} = 67.5^\circ$$

25. The figures are similar. Give the ratio of the perimeters and the ratio of the areas of the first figure to the second. The figures are not drawn to scale.

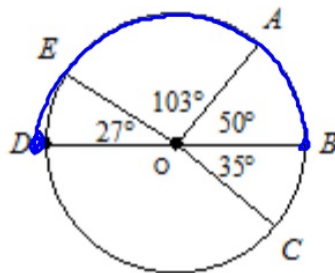


$$\frac{32}{28} = \frac{8}{7} \text{ perimeter ratio}$$

"scale factor"
 $\frac{a}{b}$

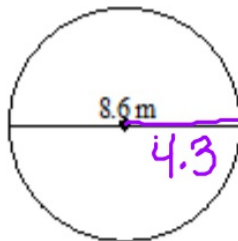
$$\frac{a^2}{b^2} = \frac{8^2}{7^2} = \frac{64}{49} \text{ area ratio}$$

26. Find the measure of \widehat{DEB} . The figure is not drawn to scale.



$$180^\circ$$

27. Find the area of the circle. Leave your answer in terms of π .



$$A = \pi r^2$$

$$A = \pi (4.3)^2$$

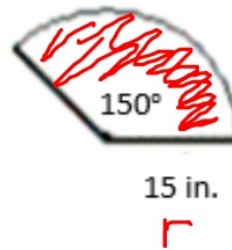
$$A = 18.49\pi \text{ m}^2$$

28. Find the area of the figure to the nearest tenth.

(A "fraction" of the area)

$$A = \left(\frac{150}{360}\right) \cdot \pi \cdot 15^2$$

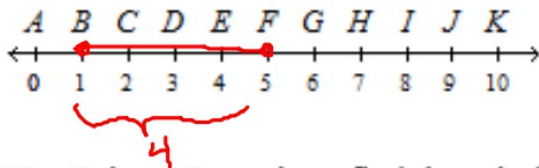
$$A = 294.5 \text{ in}^2$$



$A = \pi r^2$
Area of a circle!

(10.8)

29. Find the probability that a point chosen at random from \overline{AK} is on the segment \overline{BF} .



$$\frac{BF}{AK} = \frac{4}{10} = .4 = \boxed{40\%}$$

CH 11

30. Use Euler's Formula to find the missing number.

Edges: 27

Faces: 17

Vertices: ?

$$F + V = E + 2$$

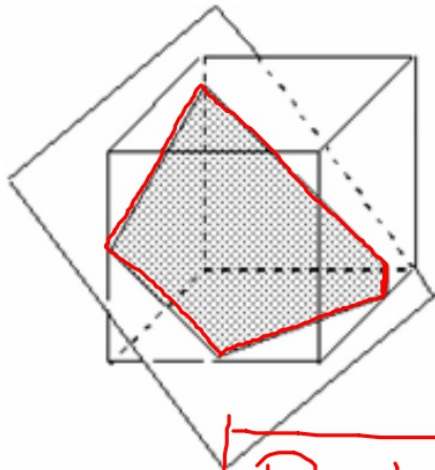
$$17 + V = 27 + 2$$

$$17 + V = 29$$

$$\begin{array}{r} -17 \\ \hline \end{array}$$

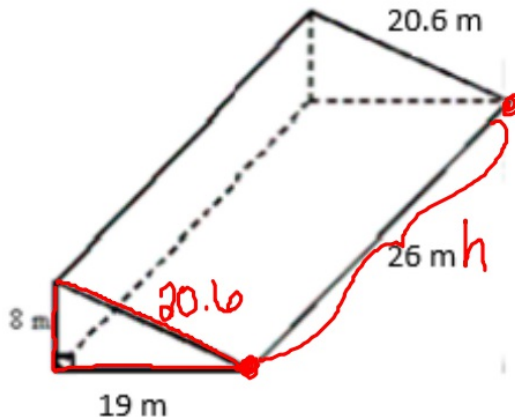
$$\boxed{V = 12}$$

31. Describe the cross section.



Pentagon

32. Use formulas to find the lateral area and surface area of the given prism. Round your answer to the nearest whole number.



$$S.A. = 2B + Ph \text{ (L.A.)}$$

$$B = \frac{1}{2}(8)(19) = 76 \checkmark$$

$$P = 8 + 19 + 20.6 = 47.6$$

$$h = 26 \checkmark$$

$$\begin{aligned} * S.A. &= 2(76) + 47.6(26) \\ &= \boxed{1,390 \text{ m}^2} \end{aligned}$$

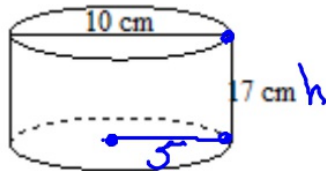
$$\begin{aligned} * L.A. &= 47.6(26) = \boxed{1,238 \text{ cm}^2} \\ &= P(h) \end{aligned}$$

Circle!

$$A = \pi r^2$$

$$C = 2\pi r$$

3. Find the surface area of the cylinder in terms of π .



Not drawn to scale

$$S.A. = 2B + Ch$$

$$B = \pi(5)^2 = 25\pi$$

$$C = 2\pi(5) = 10\pi$$

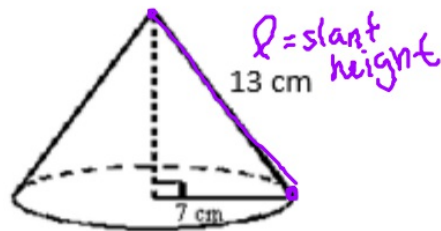
$$h = 17$$

$$S.A. = 2(25\pi) + 10\pi(17)$$

$$= 50\pi + 170\pi$$

$$= \boxed{220\pi \text{ cm}^2}$$

34. Find the surface area of the cone to the nearest tenth.



Not drawn to scale

$$S.A. = B + \frac{1}{3}Cl$$

$$B = \pi(7)^2 = 49\pi$$

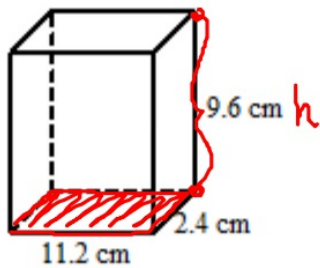
$$C = 2\pi(7) = 14\pi$$

$$l = 13$$

$$S.A. = 49\pi + \frac{1}{3}(14\pi)(13)$$

$$= 344.5 \text{ cm}^2$$

35. Find the volume of the given prism. Round to the nearest tenth if necessary.



Not drawn to scale

$$V = B \cdot h$$

$$B = 11.2(2.4) = 26.88$$

$$h = 9.6$$

$$V = 26.88(9.6) = 258 \text{ cm}^3$$

Day 3 Review / Warm-up

1. **Multiple Choice** Find the values of m and n .

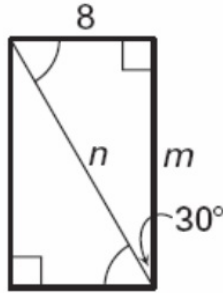
(A) $m = \frac{16\sqrt{3}}{3}, n = \frac{8\sqrt{3}}{3}$

(B) $m = 16, n = 8\sqrt{3}$

(C) $m = \frac{8\sqrt{3}}{3}, n = \frac{16\sqrt{3}}{3}$

(D) $m = 16\sqrt{3}, n = 16$

(E) $m = 8\sqrt{3}, n = 16$



2. **Multiple Choice** In the diagram below, find the measure of $\angle Z$. Round to the nearest tenth.

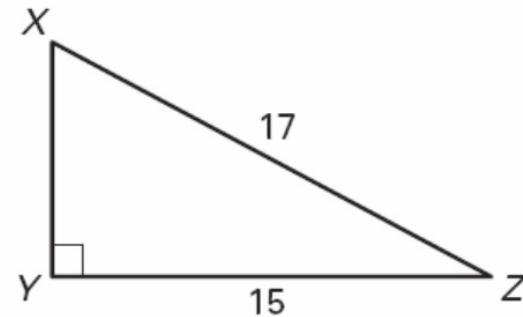
(A) 48.6°

(B) 28.1°

(C) 61.9°

(D) 41.4°

(E) 29.6°



3. **Multiple Choice** Find the values of x and y .

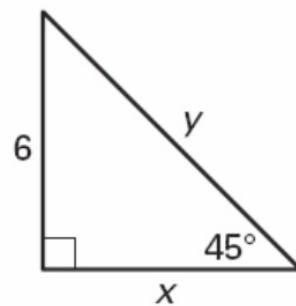
(A) $x = 6, y = 6\sqrt{3}$

(B) $x = 3\sqrt{2}, y = 6\sqrt{2}$

(C) $x = 2\sqrt{3}, y = 4\sqrt{3}$

(D) $x = 6, y = 6\sqrt{2}$

(E) $x = 6\sqrt{2}, y = 6$



4. **Multiple Choice** Find the area of the inscribed regular pentagon below. Round to the nearest tenth.

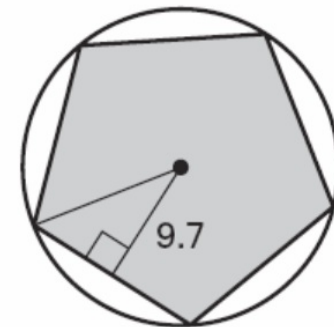
(A) 422.3 square units

(B) 341.8 square units

(C) 211.1 square units

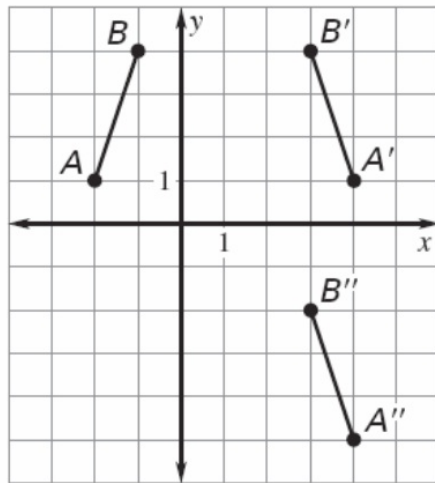
(D) 688.7 square units

(E) 452.2 square units



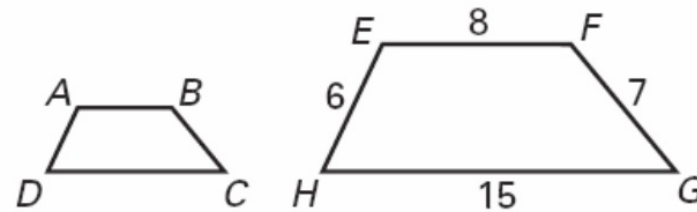
Day 3 Review / Warm-up

5. **Multiple Choice** Which two transformations were performed to obtain $\overline{A''B''}$ in the diagram?



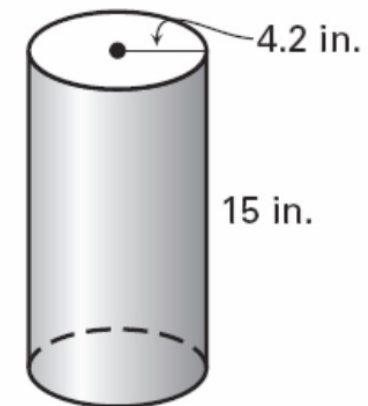
- (A) Rotate about the origin, then reflect in $x = y$.
- (B) Reflect in the x -axis, then translate parallel to x -axis.
- (C) Reflect in the line $x = 1$, then translate parallel to $x = 1$.
- (D) Reflect in the line $y = 1$, then translate parallel to $y = -1$.
- (E) Translate parallel to $x = 1$, then reflect in line $x = 1$.

6. **Multiple Choice** $ABCD \sim EFGH$. The perimeter of $ABCD$ is 18. What is the length of \overline{BC} ?



- (A) 4
- (B) 3
- (C) 7.5
- (D) 3.5
- (E) 7

7. **Multiple Choice** Find the surface area of the right cylinder. Round to the nearest hundredth.

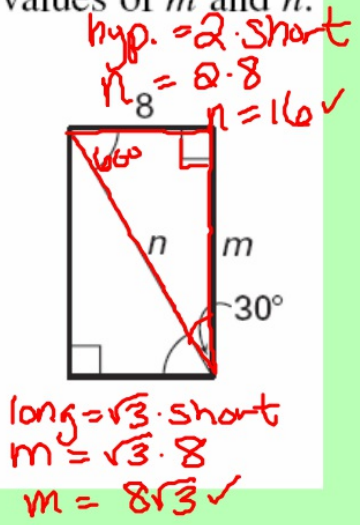


- (A) 831.27 in.^2
- (B) 252 in.^2
- (C) 395.84 in.^2
- (D) 506.68 in.^2
- (E) 451.26 in.^2

Day 3 Review / Warm-up

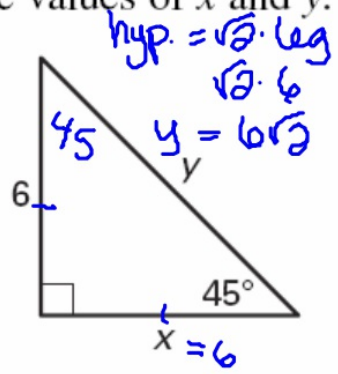
1. **Multiple Choice** Find the values of m and n .

- (A) $m = \frac{16\sqrt{3}}{3}, n = \frac{8\sqrt{3}}{3}$
- (B) $m = 16, n = 8\sqrt{3}$
- (C) $m = \frac{8\sqrt{3}}{3}, n = \frac{16\sqrt{3}}{3}$
- (D) $m = 16\sqrt{3}, n = 16$
- (E) $m = 8\sqrt{3}, n = 16$**



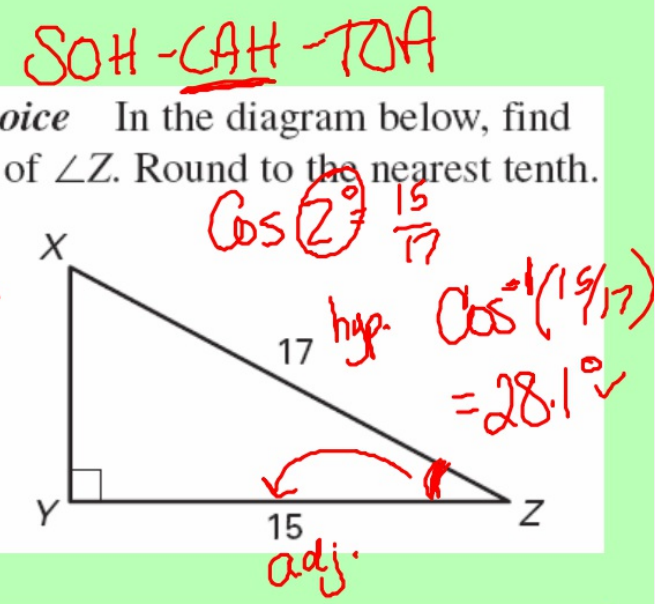
3. **Multiple Choice** Find the values of x and y .

- (A) $x = 6, y = 6\sqrt{3}$
- (B) $x = 3\sqrt{2}, y = 6\sqrt{2}$
- (C) $x = 2\sqrt{3}, y = 4\sqrt{3}$
- (D) $x = 6, y = 6\sqrt{2}$**
- (E) $x = 6\sqrt{2}, y = 6$



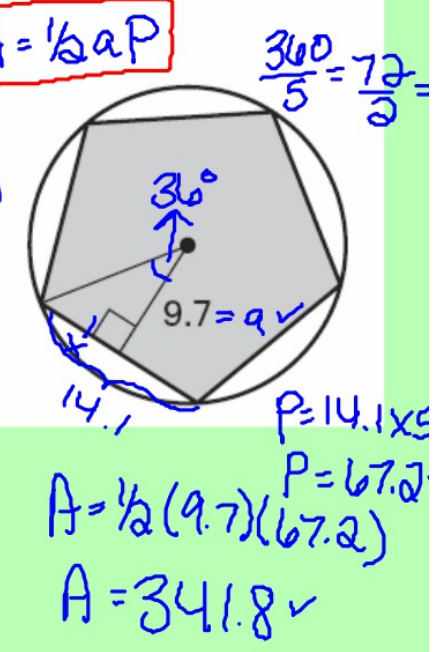
2. **Multiple Choice** In the diagram below, find the measure of $\angle Z$. Round to the nearest tenth.

- (A) 48.6°
- (B) 28.1°**
- (C) 61.9°
- (D) 41.4°
- (E) 29.6°



4. **Multiple Choice** Find the area of the inscribed regular pentagon below. Round to the nearest tenth.

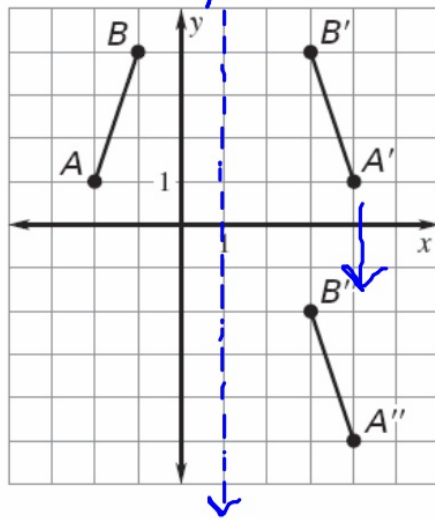
- (A) 422.3 square units
- (B) 341.8 square units**
- (C) 211.1 square units
- (D) 688.7 square units
- (E) 452.2 square units



$9.7 \cdot \tan 36 = \frac{x}{9.7} \cdot 9.7$
 $7.05 = x$

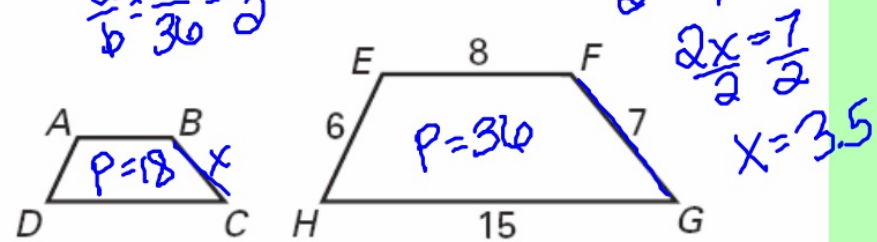
Day 3 Review / Warm-up

5. **Multiple Choice** Which two transformations were performed to obtain $\overline{A''B''}$ in the diagram?



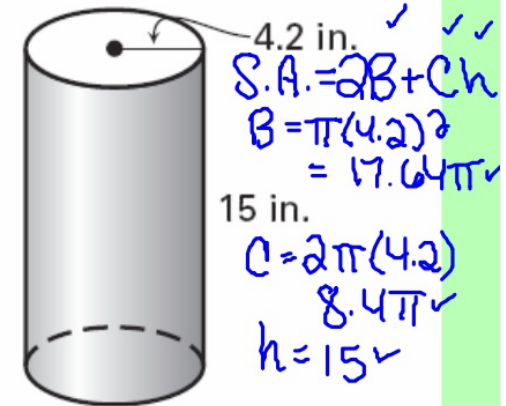
- (A) Rotate about the origin, then reflect in $x = y$.
- (B) Reflect in the x -axis, then translate parallel to x -axis.
- (C) Reflect in the line $x = 1$, then translate parallel to $x = 1$.
- (D) Reflect in the line $y = 1$, then translate parallel to $y = -1$.
- (E) Translate parallel to $x = 1$, then reflect in line $x = 1$.

6. **Multiple Choice** $ABCD \sim EFGH$. The perimeter of $ABCD$ is 18. What is the length of $\overline{B'G}$?



- (A) 4
- (B) 3
- (C) 7.5
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- (E) 7

7. **Multiple Choice** Find the surface area of the right cylinder. Round to the nearest hundredth.



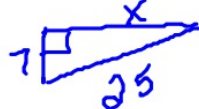
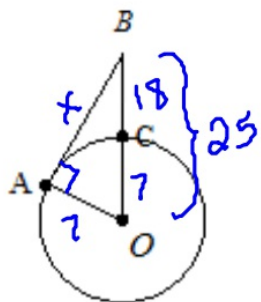
- (A) 831.27 in.²
- (B) 252 in.²
- (C) 395.84 in.²
- (D) 506.68 in.²
- (E) 451.26 in.²

36. If the similarity ratio of two similar solids is 4 : 10, what is the ratio of their corresponding areas? What is the ratio of their corresponding volumes?

$$\text{area ratio} = \frac{a^2}{b^2} = \frac{4^2}{10^2} = \frac{16}{100}$$

$$\text{volumeratio} = \frac{4^3}{10^3} = \frac{64}{1000}$$

37. \overline{AB} is tangent to $\odot O$. If $AO = 7$ and $BC = 18$, what is AB ? The diagram is not to scale.



$$7^2 + x^2 = 25^2$$

$$49 + x^2 = 625$$

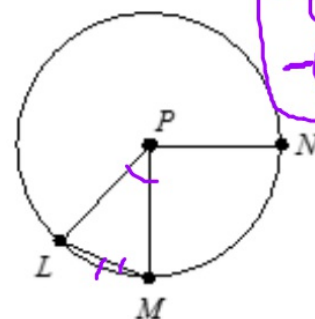
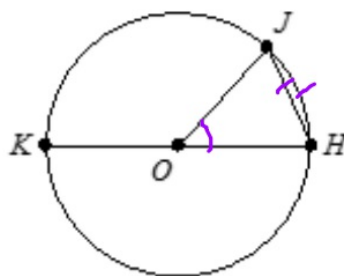
$$\begin{array}{r} 49 + x^2 = 625 \\ -49 \quad \quad -49 \\ \hline x^2 = 576 \end{array}$$

$$\sqrt{x^2} = \sqrt{576}$$

$$x = 24$$

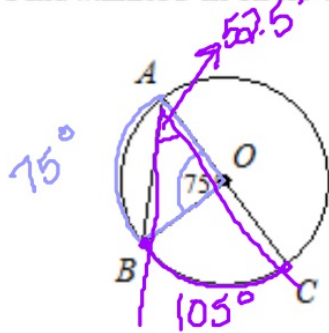
38. Circle O and circle P are congruent. Given $\widehat{HJ} \cong \widehat{LM}$, what can you conclude from the diagram?

- A. $\angle JOH \cong \angle MPL$
 B. $\overline{HJ} \cong \overline{LM}$
 C. $\angle JOH \cong \angle MPL$ and $\overline{HJ} \cong \overline{LM}$ ✓✓
 D. none of these



- Arcs
 - Chords
 - Central Angle

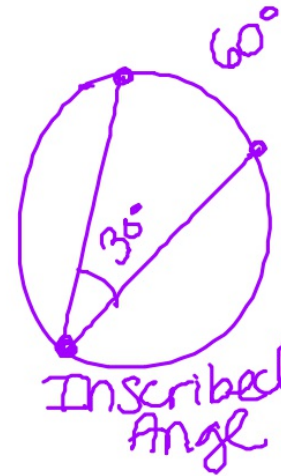
39. Find $m\angle BAC$ in circle O . (The figure is not drawn to scale.)



$$\angle BAC = 52.5^\circ$$

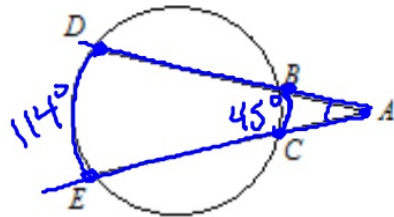


Central Angle



Inscribed Angle

40. $m\widehat{DE} = 114$ and $m\widehat{BC} = 45$. Find $m\angle A$. (The figure is not drawn to scale.)

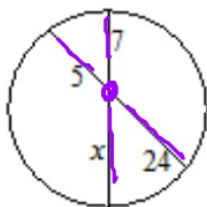


$$m\angle A = \frac{1}{2}(114 - 45)$$

$$m\angle A = \frac{1}{2}(69)$$

$$m\angle A = 34.5^\circ$$

41. Find the value of x . If necessary, round your answer to the nearest tenth. The figures are not drawn to scale.

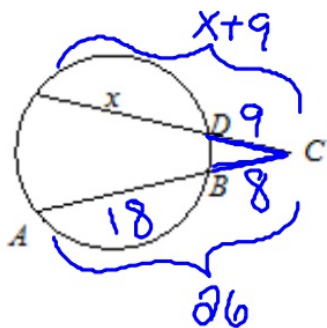


$$7 \cdot x = 24 \cdot 5$$

$$\frac{7x}{7} = \frac{120}{7}$$

$$x = 17.14$$

42. Find the value of x . If necessary, round your answer to the nearest tenth. The figures are not drawn to scale.
 $AB = 18$, $BC = 8$, and $CD = 9$



$$9(x+9) = 8(26)$$

$$\begin{array}{r} 9x + 81 = 208 \\ -81 \quad -81 \\ \hline \end{array}$$

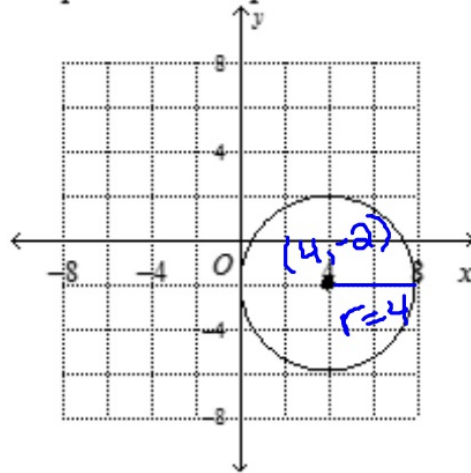
$$\frac{9x}{9} = \frac{127}{9}$$

$$x = 14.1$$

← ALL ABOUT THE SET UP!

43. A low-wattage radio station can be heard only within a certain distance from the station. On the graph below, the circular region represents that part of the city where the station can be heard, and the center of the circle represents the location of the station. Write the equation that represents the boundary for the region where the station can be heard?

Center (h, k)
radius = r



$$\cancel{(x-h)^2 + (y-k)^2 = r^2}$$

$$(x-4)^2 + (y+2)^2 = 4^2$$

$$(x-4)^2 + (y+2)^2 = 16$$

44. In a batch of 390 water purifiers, 10 were found to be defective. What is the probability that a water purifier chosen at random will be defective? Write the probability as a percent. Round to the nearest tenth of a percent if necessary.

$$\frac{10}{390} = .0256 = \boxed{2.6\%}$$

45. A drug trial is testing the effectiveness of two drugs. If 50 patients are given Drug A, 90 patients are given Drug B, and 30 patients are given a placebo, what is the probability that a patient will NOT be given a placebo?

$$\frac{\text{NO PLACEBO}}{\text{TOTAL}} = \frac{50+90}{50+90+30} = \frac{140}{170} = .8235 = \boxed{82.35\%}$$

46. A student rolls two non-standard number cubes in a probability experiment. Use the results in the frequency table below to determine the experimental probability of rolling at least one three.

| | | | | | | |
|-----------|------|------|------|------|------|------|
| Result | 1, 1 | 1, 2 | 2, 2 | 1, 3 | 2, 3 | 3, 3 |
| Frequency | 10 | 7 | 9 | 10 | 7 | 6 |

= 49 TOTAL ROLLS

$\frac{\text{"favorable"}}{\text{TOTAL}}$

$$\frac{23}{49} = .469 = \boxed{47\%}$$

47. Suppose Ruth Ann has 4 routes she can choose from to get from school to the library, and 6 routes from the library to her home. How many routes are there from Ruth Ann's school to her home with a stop at the library?

fundamental
counting principle!

$$4 \cdot 6 = \boxed{24 \text{ ROUTES}}$$

48. While organizing a film festival, you must decide which of the 11 movies will be shown on the big screen. You only have the budget to show 9 movies on this screen, and you want to be able to tell moviegoers which order the films will be shown. In how many different ways can you show 9 of the 11 movies on the big screen?

$${}_{11}P_9 = \boxed{19,958,400}$$

order
matters!

49. A pet store has two tanks of tropical fish. The first tank contains 4 blue fish and 9 yellow fish and the second tank contains 7 blue fish and 8 yellow fish. If Keisha randomly purchases a fish from each tank, what is the probability that both fish will be blue?

"AND"

$$P(B_{T1}) \cdot P(B_{T2}) = \frac{4}{13} \cdot \frac{7}{15} = .1435$$

14.35%

50. On St. Patrick's Day, you took note of who was coming into your restaurant wearing green. The two-way frequency table shows the results of your survey. What is the probability that a randomly chosen customer will be a female wearing green? Round to the nearest thousandth.

| Wearing Green | Yes | No | Totals |
|---------------|-----|-----|--------|
| Male | 45 | 47 | 92 |
| Female | 40 | 67 | 107 |
| Totals | 85 | 114 | 199 |

$$\frac{40}{199} = .201$$

20%