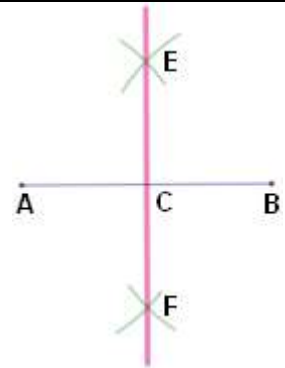


Geometry Semester 1 Model Problems (CA Essential Standards) Short Answer Part 2

GS 16.0

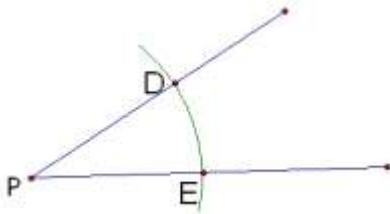
32. Given: \overline{AB} . What is the first step in constructing the perpendicular bisector to \overline{AB} ?

- Draw a line segment connecting points E and F .
- From point C , draw an arc that intersects the line at points A and B .
- Draw a line segment connecting points A and B .
- From points A and B , draw equal arcs that intersect at points E and F .



33. Darla is constructing an equilateral triangle. Which of the following could be her first step?

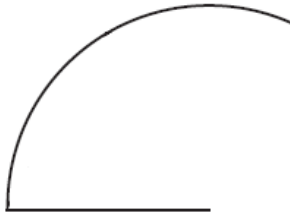
a.



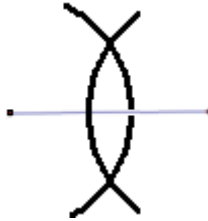
c.



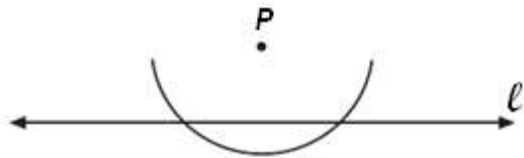
b.



d.



34. Marsha is using a straightedge and compass to do the construction shown.

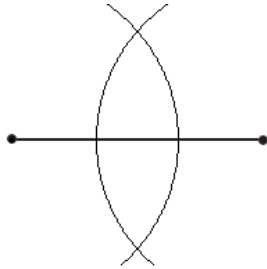


Which statement *best* describes the construction Marsha is doing?

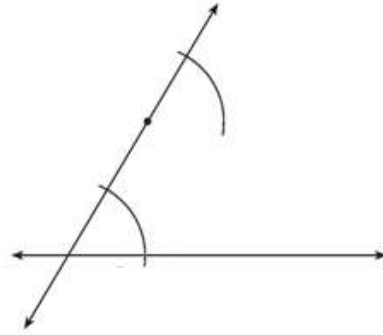
- a line through P parallel to line l by constructing two lines perpendicular to the same line
- a line through P parallel to line l by copying an angle
- a line through P perpendicular to line l
- a line through P congruent to line l

35. Amina is bisecting an angle. Which of the construction diagrams shown below best represents the beginning of Amina's construction?

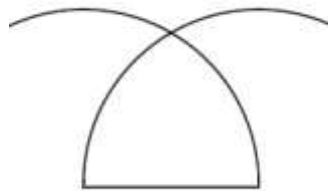
a.



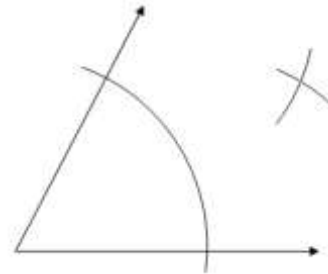
c.



b.

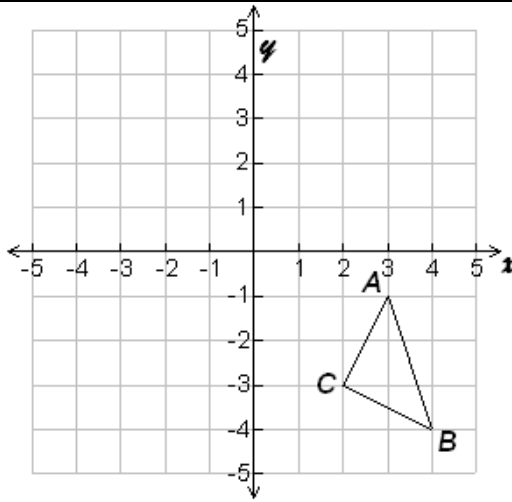


d.



GS 22.0

36.

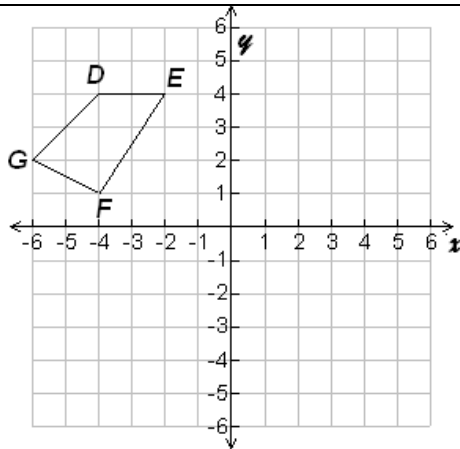


If $\triangle ABC$ is rotated 90° clockwise about the origin to form $\triangle A'B'C'$, what would be the coordinates of A' ?

37. The coordinates of the vertices of $\triangle JKL$, are $J(-2, -1)$, $K(1, 3)$, $L(4, -3)$. If $\triangle JKL$ is translated 2 units down and 4 units to the right to create $\triangle J'K'L'$, what are the coordinates of the vertices of $\triangle J'K'L'$?

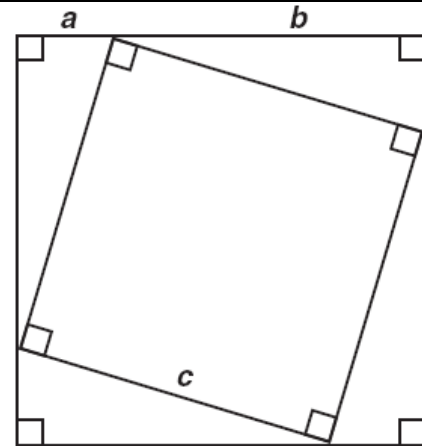
38.

If quadrilateral $DEFG$ is reflected across the y -axis, it would create quadrilateral $D'E'F'G'$. What are the coordinates of point G' ?



GS 14.0

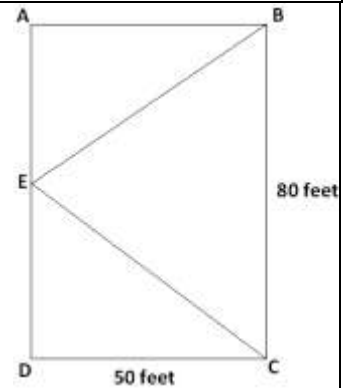
39. A diagram from a proof of the Pythagorean Theorem is shown. Write an equation that represents the area of the entire square in two ways. On the left side, express the area as the product of the length and the width. On the right, represent the sum of the areas of the triangles and the smaller square. Then use the equation to prove the theorem.



GS 15.0

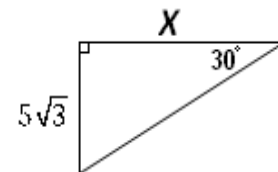
40. A right triangle's hypotenuse has length 11. If one leg has length 6, what is the length of the other leg?

41. In a basketball game, a player from the home team threw the ball from corner C to a player standing at point E. (E is the midpoint of \overline{AD}). Then the player at point E threw the ball to a player at corner B. If the court was 80 feet long and 50 feet wide, how far was the ball thrown? (Leave in simplified radical form)



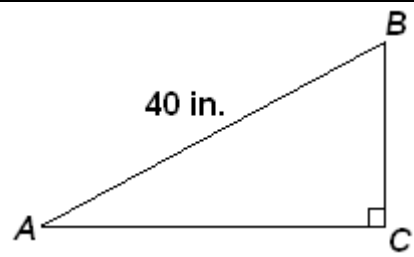
GS 20.0

42. The right triangle in the diagram has one side with a length of $5\sqrt{3}$. What is the length of the side marked x ?



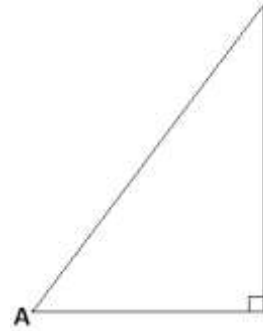
GS 18.0

43. In the figure shown, $\sin A \cong 0.4$, $\cos A \cong 0.5$, and $\tan A \cong 0.9$. What is the approximate length of \overline{BC} ?



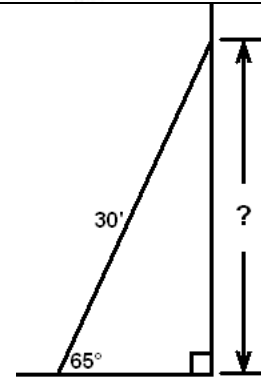
44.

In the figure shown, if $\tan A = \frac{4}{3}$, what are $\sin A$ and $\cos A$?



45. A ladder is leaned against a wall at an angle of 65° to the ground. How far off the ground does the ladder touch the wall?

$\sin 65^\circ \approx 0.9$ $\cos 65^\circ \approx 0.4$ $\tan 65^\circ \approx 2.1$

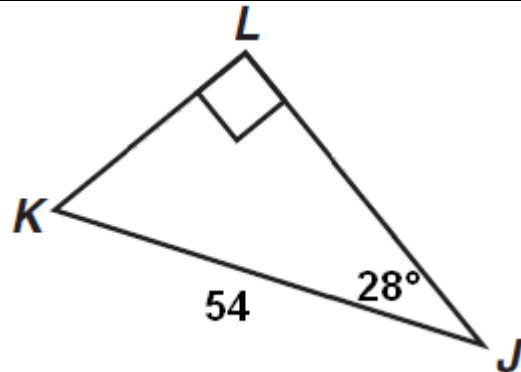


GS 19.0

46.

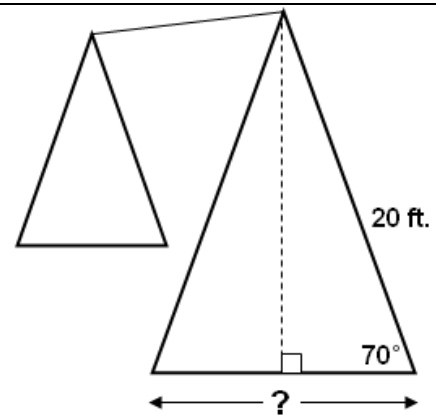
Triangle JKL is shown in the diagram. Which equation should be used to find the length of \overline{LJ} ?

- a. $\sin 28^\circ = \frac{LJ}{54}$
- b. $\sin 28^\circ = \frac{54}{LJ}$
- c. $\cos 28^\circ = \frac{LJ}{54}$
- d. $\cos 28^\circ = \frac{54}{LJ}$

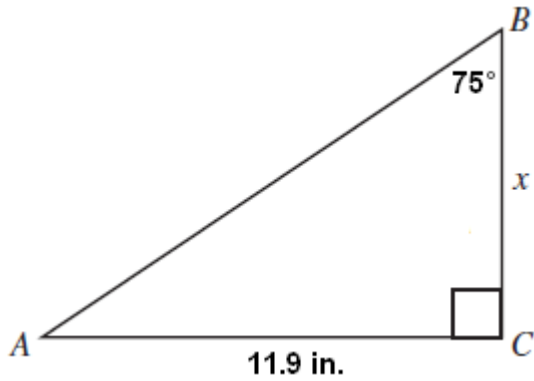


47. On a swing set, an engineer used a support bar that was 20 feet long. If the support bar forms a 70° angle to the ground, how far apart will the support bars be at the base?

$\sin 70^\circ \approx 0.94$ $\cos 70^\circ \approx 0.34$ $\tan 70^\circ \approx 2.75$
--



48.



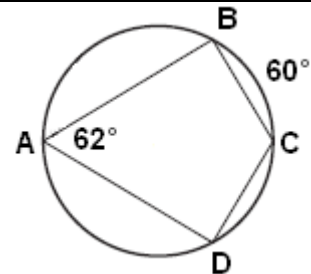
In the diagram, $m\angle B = 75^\circ$ and $AC = 11.9$ in. Which equation could be used to find BC ?

- a. $x = 11.9(\tan 75^\circ)$
- b. $x = 11.9(\sin 75^\circ)$
- c. $x = \frac{11.9}{\tan 75^\circ}$
- d. $x = \frac{11.9}{\sin 75^\circ}$

GS 21.0

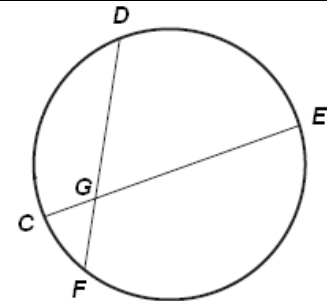
49.

In the circle shown, the measure of $\angle B = 60^\circ$, and the measure of $\angle ABD = 62^\circ$. What is the measure of $\angle CD$?



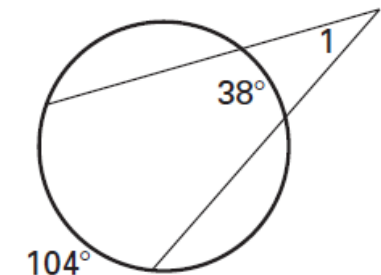
50.

In the circle shown, \overline{DF} and \overline{CE} are chords intersecting at G . If $DG = 9$, $FG = 4$, and $EG = 12$, what is the length of \overline{CG} ?



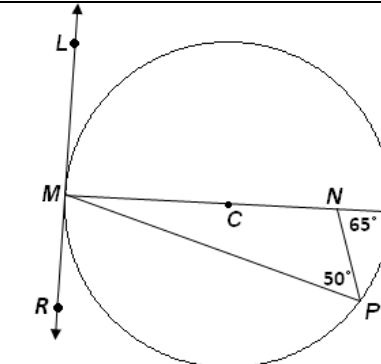
51.

In the circle shown, what is the measure of angle 1?



52.

\overline{LM} is tangent to a circle, whose center is C , at point M . \overline{MQ} is a diameter. If $m\angle QNP = 65^\circ$ and $m\angle NPM = 50^\circ$, what is $m\angle PMR$?

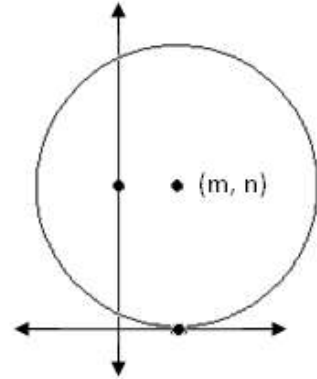


53. A square is circumscribed about a circle. What is the ratio of the circumference of the circle to the perimeter of the square?

- a. $\frac{1}{4}$ b. $\frac{1}{2}$ c. $\frac{2}{\pi}$ d. $\frac{\pi}{4}$

GS 17.2

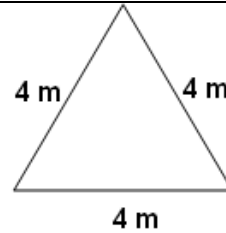
54. Which of the following is the equation of the circle shown in the diagram?



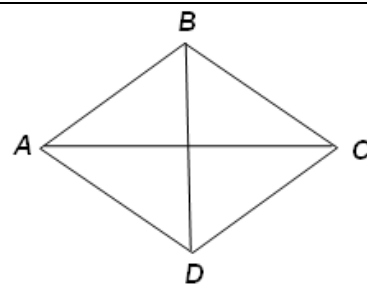
GS 10.0

55. A rectangle that is 12 feet wide has a perimeter of 40 feet. What is the area of the rectangle?

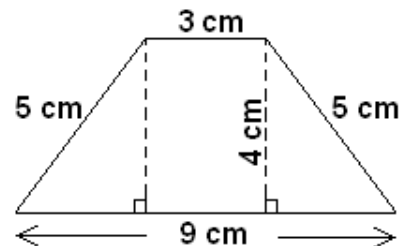
56. Each side of a triangle measures 4 m. What is the area of the triangle? (Leave the answer in simplified radical form).



57. Quadrilateral **ABCD** is a rhombus. If **AC** = 10 inches and **BD** = 8 inches, what is the area of **ABCD**?

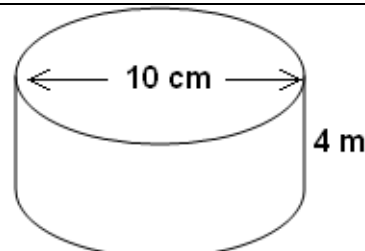


58. The diagram shows a trapezoid with a height of 4 cm. What is the area of the trapezoid?

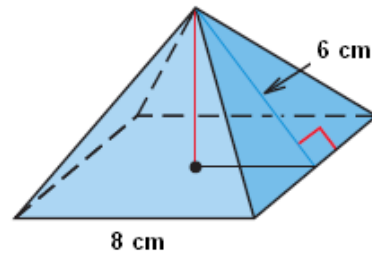


GS 9.0

59. The cylinder shown has a height of 4 cm and the diameter of the base is 10 cm. What is the volume of the cylinder?



60. The pyramid shown has a square base that measures 8 cm on each side. The slant height of the pyramid is 6 cm. What is the surface area of the pyramid?

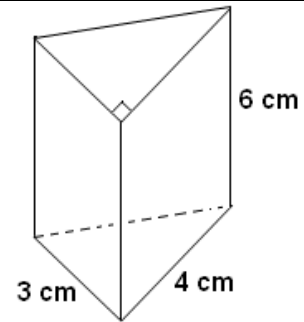


GS 8.0

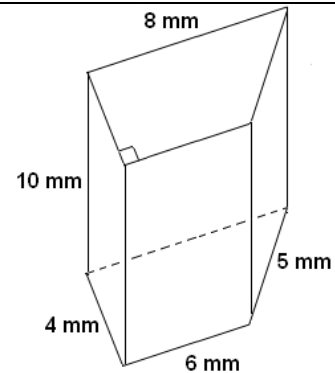
61. A cylinder rolls across a table top for 10 complete revolutions. If the diameter of the base is 6 inches, how far did the cylinder travel? (Leave the answer in terms of π).



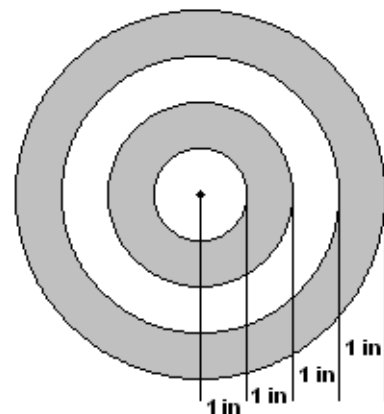
62. The prism shown has a base in the shape of a right triangle. What is the lateral surface area of the prism?



63. What is the volume of the prism shown?



64. A target for a yard game is made with areas that are alternately painted white and gray, as shown in the diagram. The inner circle is white and has a radius of 1 inch. Each of the other three rings has a radius 1 inch more than the ring before it. What is the area of the white portion of the target?

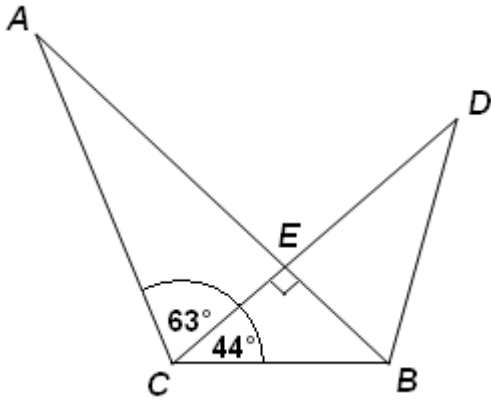


GS 11.0

65. The volume of a right rectangular prism is calculated to be 18 cubic centimeters. If the length, the width, and the height of the prism are all doubled, what would be the volume of the new prism?

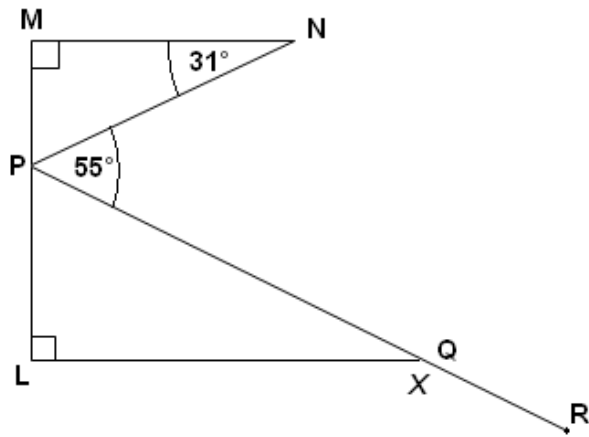
GS 13.0

66.



In the diagram shown, $m\angle CBD = 95^\circ$. What is the measure of $\angle CDB$?

67.



In the diagram shown, P is a point on \overline{ML} . What is the measure of the angle marked X ?