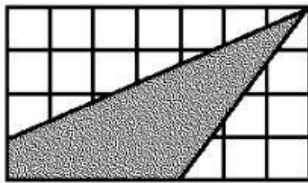


- a. 20 mi b. 25 mi c. 10 mi d. 35 mi

___ 28. A triangle has sides of lengths 12, 14, and 19. Is it a right triangle? Explain.

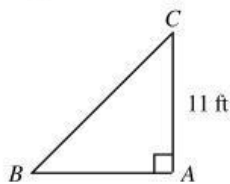
- a. yes; $12^2 + 14^2 \neq 19^2$ c. no; $12^2 + 14^2 \neq 19^2$
b. no; $12^2 + 14^2 = 19^2$ d. yes; $12^2 + 14^2 = 19^2$

___ 29. The figure is drawn on centimeter grid paper. Find the perimeter of the shaded figure to the nearest tenth.



- a. 17.6 cm² b. 10.8 cm² c. 15.6 cm² d. 18.0 cm²

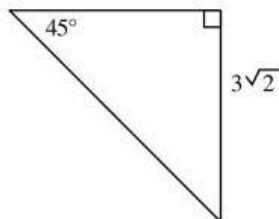
___ 30. In triangle ABC , $\angle A$ is a right angle and $m\angle B = 45^\circ$. Find BC . If your answer is not an integer, leave it in simplest radical form.



Not drawn to scale

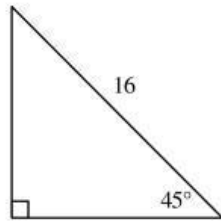
- a. 22 ft b. $22\sqrt{2}$ ft c. 11 ft d. $11\sqrt{2}$ ft

___ 31. Find the length of the hypotenuse.



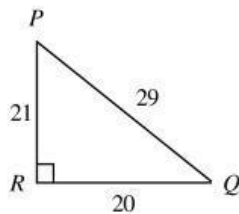
- a. 12 b. 6 c. 5 d. 18

___ 32. Find the length of the leg. If your answer is not an integer, leave it in simplest radical form.



Not drawn to scale

- a. 128 b. $8\sqrt{2}$ c. 16 d. $2\sqrt{2}$
- ___ 33. The area of a square garden is 50 m^2 . How long is the diagonal?
a. 25 m b. 100 m c. $5\sqrt{6} \text{ m}$ d. 10 m
- ___ 34. The length of the hypotenuse of a 30° - 60° - 90° triangle is 4. Find the perimeter.
a. $4 + 12\sqrt{3}$ c. $2 + 6\sqrt{3}$
b. $6 + 2\sqrt{3}$ d. $12 + 4\sqrt{3}$
- ___ 35. A piece of art is in the shape of an equilateral triangle with sides of 7 in. Find the area of the piece of art. Round your answer to the nearest tenth.
a. none of these b. 42.4 in.^2 c. 17.3 in.^2 d. 21.2 in.^2
- ___ 36. Write the tangent ratios for $\angle P$ and $\angle Q$.

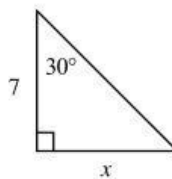


Not drawn to scale

- a. $\tan P = \frac{29}{21}$; $\tan Q = \frac{21}{29}$ c. $\tan P = \frac{21}{20}$; $\tan Q = \frac{20}{21}$
b. $\tan P = \frac{20}{21}$; $\tan Q = \frac{21}{20}$ d. $\tan P = \frac{29}{20}$; $\tan Q = \frac{20}{29}$

Find the value of x . Round your answer to the nearest tenth.

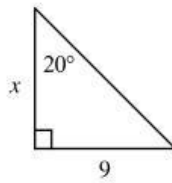
___ 37.



Not drawn to scale

- a. 3.5 b. 12.1 c. 6.1 d. 4

___ 38.

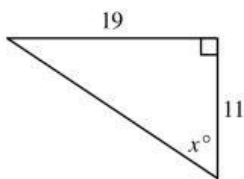


Not drawn to scale

- a. 3.3 b. 3.1 c. 24.7 d. 8.5

Find the value of x to the nearest degree.

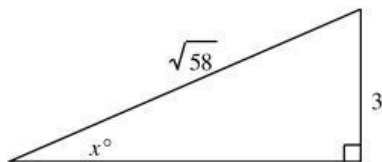
___ 39.



Not drawn to scale

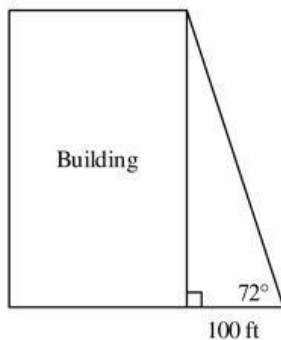
- a. 30 b. 60 c. 70 d. 85

___ 40.



- a. 67 b. 22 c. 83 d. 53

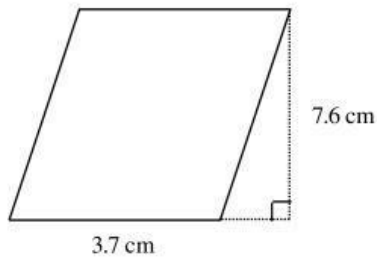
___ 41. The students in Mr. Collin's class used a surveyor's measuring device to find the angle from their location to the top of a building. They also measured their distance from the bottom of the building. The diagram shows the angle measure and the distance. To the nearest foot, find the height of the building.



- a. 2400 ft b. 72 ft c. 308 ft d. 33 ft

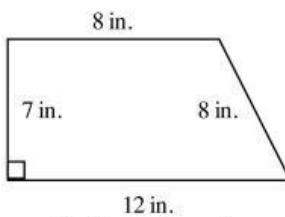
Find the area. The figure is not drawn to scale.

___ 42.



- a. 28.12 cm^2 b. 3.9 cm^2 c. 11.3 cm^2 d. 56.24 cm^2

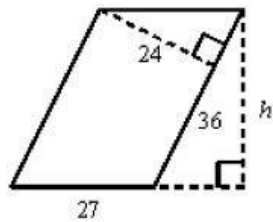
___ 43.



Not drawn to scale

- a. 77.2 in.^2 b. 80 in.^2 c. 75 in.^2 d. 70 in.^2

___ 44. Find the value of h in the parallelogram.

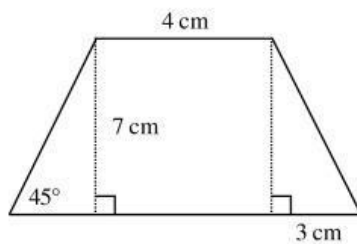


Not drawn to scale

- a. 32 b. 28 c. 40.5 d. 35

Find the area of the trapezoid. Leave your answer in simplest radical form.

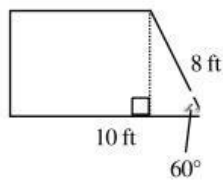
___ 45.



Not drawn to scale

- a. 63 cm^2 b. 70 cm^2 c. 24.5 cm^2 d. 9 cm^2

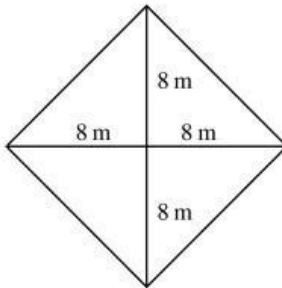
___ 46.



Not drawn to scale

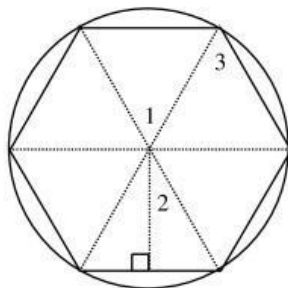
- a. $40\sqrt{3} \text{ ft}^2$ b. $16\sqrt{3} \text{ ft}^2$ c. $24\sqrt{3} \text{ ft}^2$ d. $32\sqrt{3} \text{ ft}^2$

___ 47. Find the area of the rhombus.



- a. 12 m^2 b. 4096 m^2 c. 128 m^2 d. 32 m^2

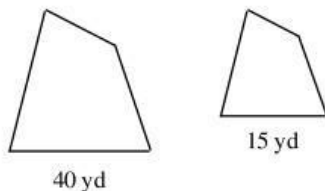
___ 48. Given the regular hexagon, find the measure of each numbered angle.



- a. $m\angle 1 = 30, m\angle 2 = 60, m\angle 3 = 30$ c. $m\angle 1 = 60, m\angle 2 = 30, m\angle 3 = 60$
 b. $m\angle 1 = m\angle 2 = m\angle 3 = 60$ d. $m\angle 1 = 60, m\angle 2 = 30, m\angle 3 = 30$

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.

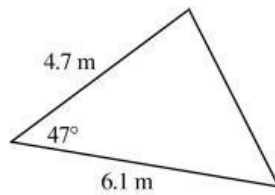
___ 49.



- a. $\frac{8}{3}$ and $\frac{10}{5}$ b. $\frac{9}{4}$ and $\frac{64}{9}$ c. $\frac{9}{4}$ and $\frac{10}{5}$ d. $\frac{8}{3}$ and $\frac{64}{9}$

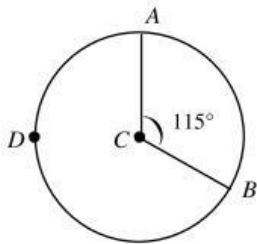
Find the area of the triangle. Give the answer to the nearest tenth. The drawing may not be to scale.

___ 50.



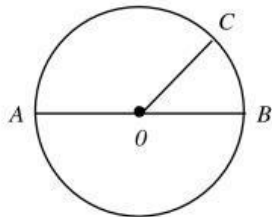
- a. 10.5 m^2 b. 9.8 m^2 c. 19.6 m^2 d. 21.0 m^2

___ 51. Name the minor arc and find its measure.



- a. arc ADB ; 30° b. arc AB ; 115° c. arc ADB ; 245° d. arc AB ; 245°

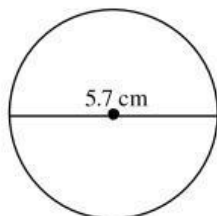
___ 52. Identify a semicircle that contains C.



- a. semicircle ABC c. semicircle CB
b. semicircle AC d. semicircle ACB

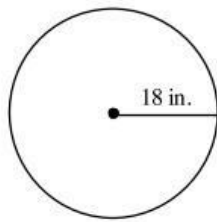
Find the circumference. Leave your answer in terms of π .

___ 53.



- a. $11.4\pi \text{ cm}$ b. $8.55\pi \text{ cm}$ c. $2.85\pi \text{ cm}$ d. $5.7\pi \text{ cm}$

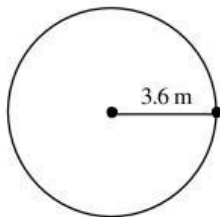
___ 54.



- a. 54π in. b. 36π in. c. 18π in. d. 324π in.

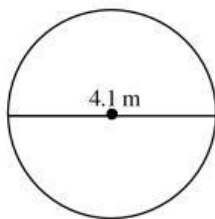
Find the area of the circle. Leave your answer in terms of π .

___ 55.



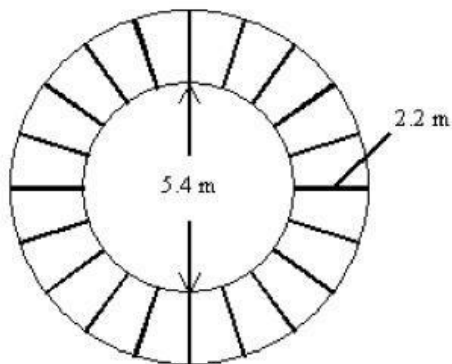
- a. $25.92\pi \text{ m}^2$ b. $1.8\pi \text{ m}^2$ c. $12.96\pi \text{ m}^2$ d. $46.66\pi \text{ m}^2$

___ 56.



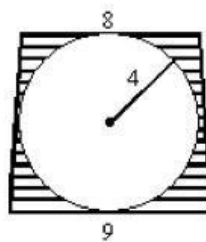
- a. $4.2025\pi \text{ m}^2$ b. $8.405\pi \text{ m}^2$ c. $16.81\pi \text{ m}^2$ d. $11.2\pi \text{ m}^2$

___ 57. The figure represents the overhead view of a deck surrounding a hot tub. What is the area of the deck? Round to the nearest tenth.

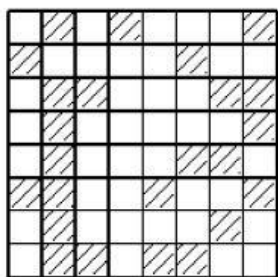


- a. 75.4 m^2 b. 89.8 m^2 c. 278.7 m^2 d. 22.9 m^2

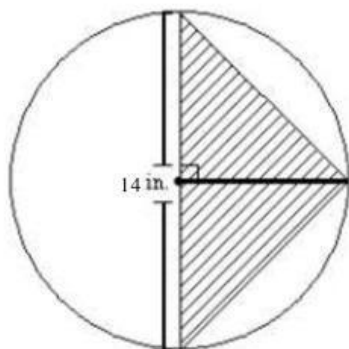
58. Find the area of the shaded portion of the figure. Dimensions are in feet. Leave your answer in terms of π .



- a. $(68 - 8\pi) \text{ ft}^2$ b. $(72 - 16\pi) \text{ ft}^2$ c. $(68 - 16\pi) \text{ ft}^2$ d. none of these
59. What is the probability that a point chosen at random on the grid will lie in the unshaded region?



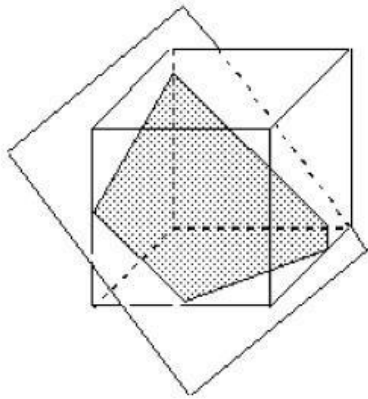
- a. $\frac{5}{8}$ b. $\frac{2}{5}$ c. $\frac{3}{8}$ d. $\frac{3}{5}$
60. Find the probability that a point chosen at random will lie in the shaded area.



- a. 0.32 b. 0.62 c. 0.94 d. 0.02

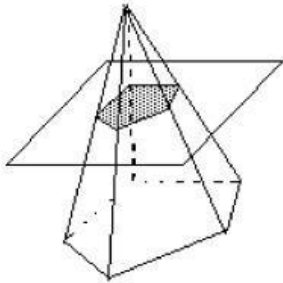
Describe the cross section.

___ 61.



- a. pentagon b. trapezoid c. hexagon d. cube

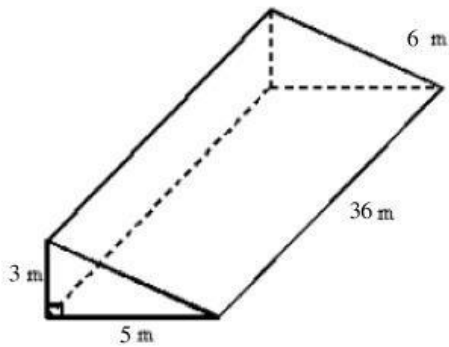
___ 62. Pierre built the model shown in the diagram below for a social studies project. He wants to be able to show the inside of his model, so he sliced the figure as shown. Describe the cross section he created.



- a. hexagon b. pentagon c. pyramid d. rectangle

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

___ 63.

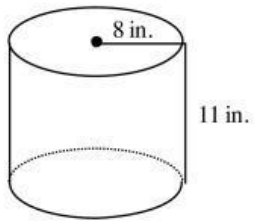


Not drawn to scale

- a. 468 m^2 ; 519 m^2 c. 504 m^2 ; 512 m^2
b. 468 m^2 ; 534 m^2 d. 504 m^2 ; 519 m^2

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

___ 64.

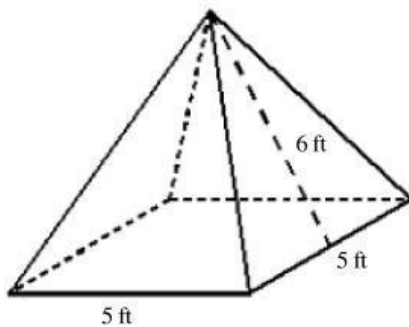


Not drawn to scale

- a. 688 in.^2 b. $304\pi \text{ in.}^2$ c. $176\pi \text{ in.}^2$ d. $208\pi \text{ in.}^2$

Find the surface area of the pyramid shown to the nearest whole number.

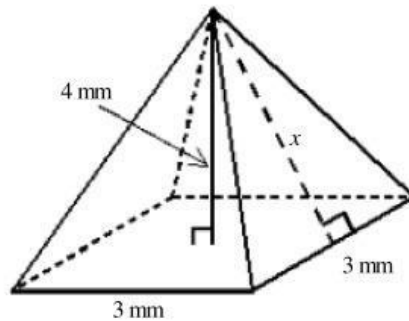
___ 65.



Not drawn to scale

- a. 85 ft^2 b. 145 ft^2 c. 60 ft^2 d. 25 ft^2

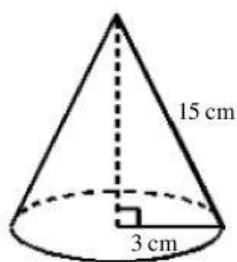
___ 66. Find the slant height x of the pyramid shown to the nearest tenth.



Not drawn to scale

- a. 2.4 mm b. 5 mm c. 2.6 mm d. 4.3 mm

___ 67. Find the surface area of the cone in terms of π .

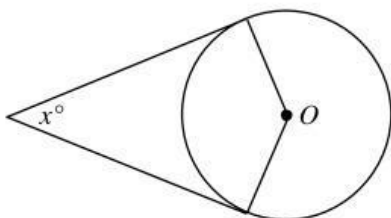


Not drawn to scale

- a. $54\pi \text{ cm}^2$ b. $99\pi \text{ cm}^2$ c. $51\pi \text{ cm}^2$ d. 49.5 cm^2

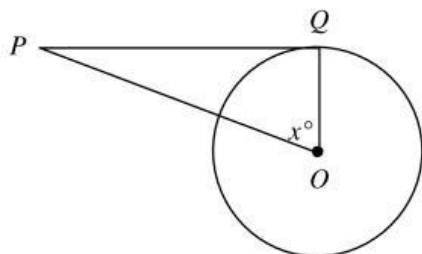
Assume that lines that appear to be tangent are tangent. O is the center of the circle. Find the value of x . (Figures are not drawn to scale.)

68. $m\angle O = 111$



- a. 291 b. 69 c. 55.5 d. 222

69. $m\angle P = 12$



- a. 78 b. 39 c. 102 d. 24

70. $\overline{BC}$ is tangent to circle A at B and to circle D at C (not drawn to scale). $AB = 7$, $BC = 18$, and $DC = 5$. Find AD to the nearest tenth.