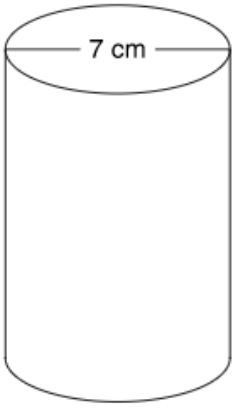
Level 3: Geometry Post-Test

Question 1:

The top of the cylindrical can shown below has a diameter of 7 centimeters.



What is the circumference of the top of the can? Round your answer to the nearest hundredth of a centimeter. Use 3.14 for π.

a. 10.99 cm

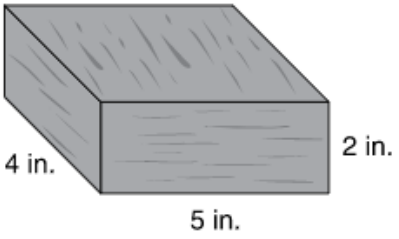
b. 21.98 cm

c. 38.47 cm

d. 43.96 cm

Question 2:

Josh builds a wooden box shaped like a rectangular prism.



What is the surface area, in square inches, of the box?

a. 11 in^2

b. 38 in^2

c. 40 in^2

d. 76 in^2

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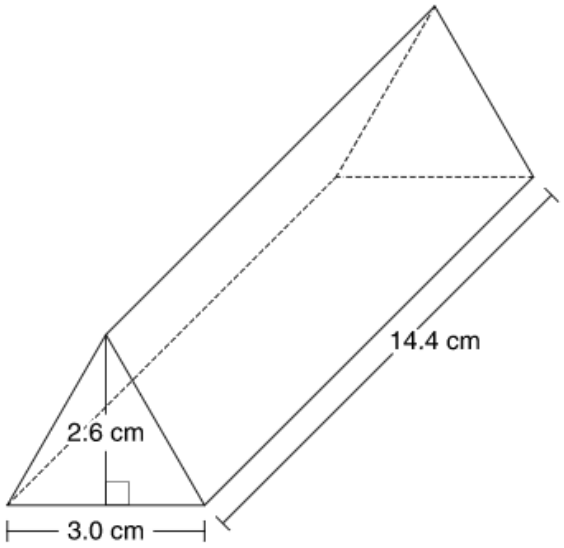
Question 3:

Julia's favorite snack comes in a box shaped like a right triangular prism. The dimensions of the prism are shown below.



What is the volume of the box? Round your answer to the nearest whole number.

a. 43 cm^3

b. 56 cm^3

c. 112 cm^3

d. 137 cm^3

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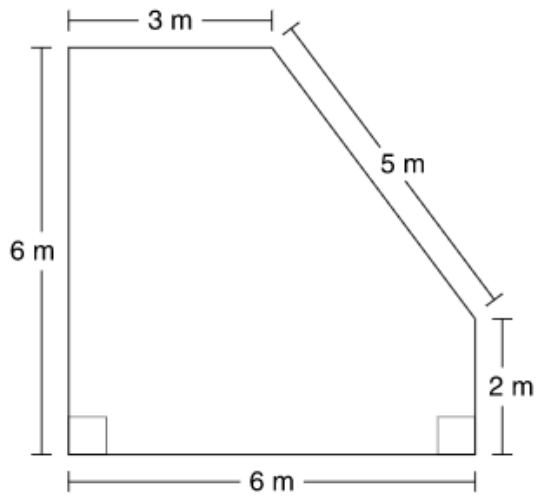
Question 4:

Megan has a pen for her dog. The dimensions of the pen (in meters) are shown below.



What is the area of the pen?

a. 22 m^2

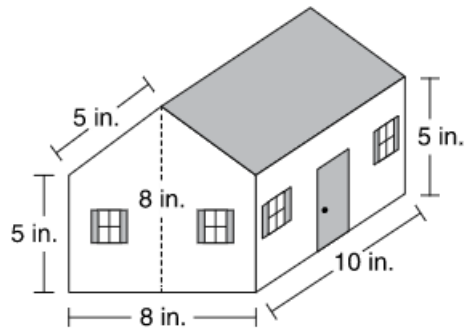
b. 24 m^2

c. 30 m^2

d. 42 m^2

Question 5:

Victoria builds a dollhouse in the shape of a right prism, as shown below.



Including the roof, floor, and walls, what is the total surface area of the dollhouse?

a. 152 in^2

b. 280 in^2

c. 304 in^2

d. 384 in^2

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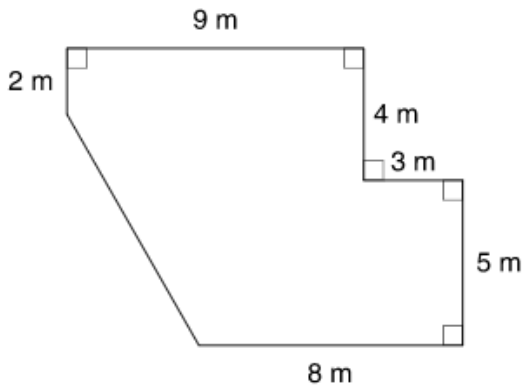
Question 6:

Joseph's lawn is shown below.



What is the area of the lawn?

a. 82 m^2

b. 76 m^2

c. 72 m^2

d. 68 m^2

Question 7:

Imagine that a planet revolves around a star in a circular orbit. To complete one orbit, the planet travels 12,560,000 miles. Which is the best estimate of the distance between the planet and the star?

a. 1,000,000 miles

b. 2,000,000 miles

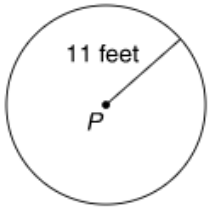
c. 4,000,000 miles

d. 6,000,000 miles

Continue

Question 8:

Jeremy's dog is on an 11-foot leash that is tied to a pole, as shown in the diagram.



What is the area of the circle in which the dog can run? Use 3.14 for π. Round your answer to the nearest square foot.

a. 69 ft^2

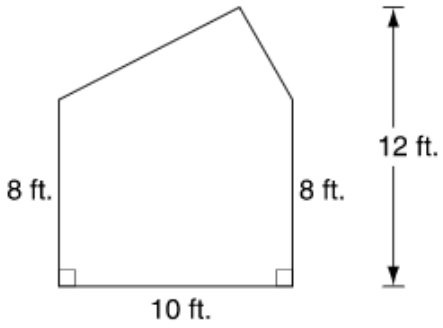
b. 108 ft^2

c. 380 ft^2

d. 1520 ft^2

Question 9:

Mia is planning to paint one wall of her living room. The living room ceiling is vaulted, which makes each end of the wall to be painted 8 feet tall, but in between the wall is 12 feet tall. This diagram shows the dimensions of the living room wall that Mia is planning to paint.



What is the area of the wall?

a. 20 ft^2

b. 80 ft^2

c. 100 ft^2

d. 120 ft^2

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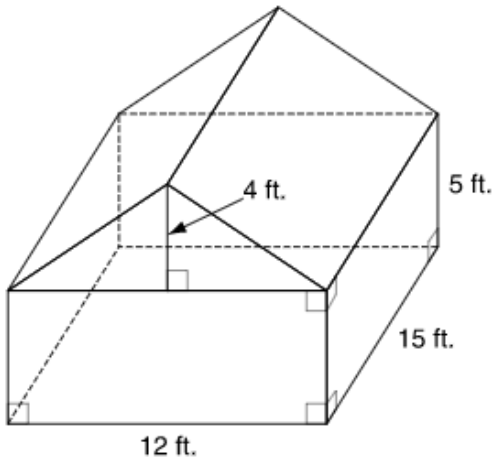
Question 10:

This diagram shows the dimensions of a new greenhouse.



What is the total volume of the new greenhouse?

a. 540 ft^3

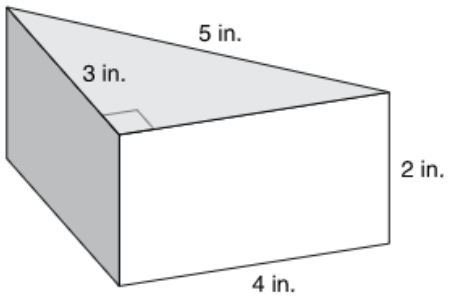
b. 900 ft^3

c. 1080 ft^3

d. 1260 ft^3

Question 11:

A piece of cheese is shaped like a right triangular prism.



The entire surface of the cheese will be covered with a wax coating. What is the surface area of the piece of cheese?

a. 20 in^2

b. 26 in^2

c. 32 in^2

d. 36 in^2

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Question 12:

Marcy draws a triangle. Two sides of the triangle each measure 15 inches. Which of the following could be the measures of two angles in Marcy's triangle?

a. 15°, 110°

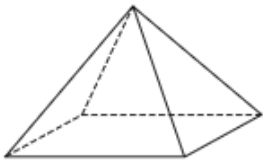
b. 40°, 50°

c. 30°, 70°

d. 40°, 100°

Question 13:

The figure below shows a right pyramid with a square base.



Imagine a cross-section of the pyramid formed by a plane cutting through it that meets these conditions.

- The plane passes through the top vertex of the pyramid.
- The plane is perpendicular to the base of the pyramid.

What must be true about the cross section?

a. It is a right triangle.

b. It is an isosceles triangle.

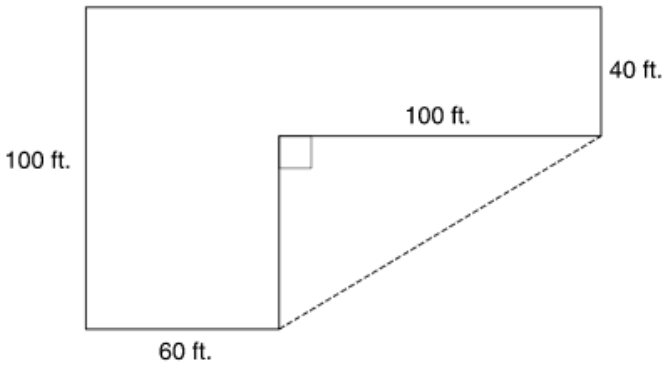
c. It is an obtuse triangle.

d. It is an equilateral triangle.

Continue

Question 14:

The solid line segments in the drawing below show the dimensions of the base of a house for monkeys.

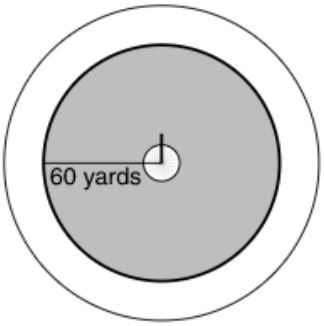


The zoo director is planning to expand the monkey house, as shown by the dotted line. What will be the total area, in square feet, of the monkey house after it is expanded?

ft^2

Question 15:

A circular running path surrounds a grassy area as shown.



How long, in yards, is the inside edge of the running path? Use 3.14 for π. Round your answer to the nearest yard.

yd

Continue

Question 16:

Angles *ABC* and *CBD* are complementary angles. The measure of angle *ABC* is one-half the measure of angle *BCD*. What is the measure of angle ABC, in degrees?

°

Question 17:

A vase is in the shape of a right hexagonal prism. The area of the base is 36 cm^2. The volume of water in the vase when it is $\frac{2}{3}$ full is 648 cm^3.

What is the height of the vase in centimeters?

a. 12 cm

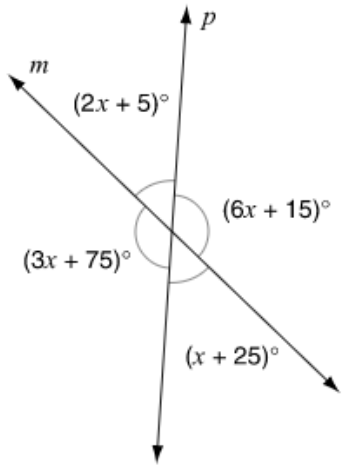
b. 18 cm

c. 27 cm

d. 76 cm

Question 18:

Lines m and p intersect.



Which equation is true?

a. $2x + 5 = x + 25$

b. $x + 25 = 3x + 75$

c. $6x + 15 + 2x + 5 = 90$

d. $3x + 75 + 6x + 15 = 180$

Continue

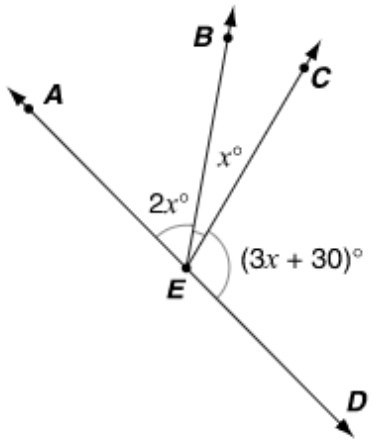
Question 19:

The circumference of a circular tabletop is 18.84 feet. What is the area of the tabletop in square feet? Use 3.14 for π.

$\square$ ft^2

Question 20:

Line AD is a straight line.



What is m $\angle AEC$ in degrees?

$\square$ °

Stop