Level 2: Geometry Pretest

Question 1:

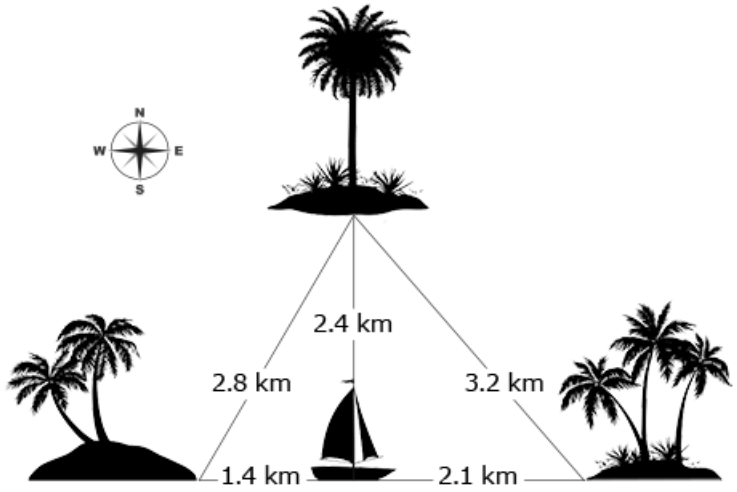
To buy grass seed for the athletic field, the park director must find the area of the field. The field is a rectangle 84 yards long and 36 yards wide.

What is the area of the field?

square yards

Question 2:

An oceanographer needs to survey a region of sea floor that is bounded by three islands, as shown on the map below.



What is the area of the region to be surveyed (to the nearest tenth)?

a. 4.2 km^2

b. 4.5 km^2

c. 8.4 km^2

d. 9.5 km^2

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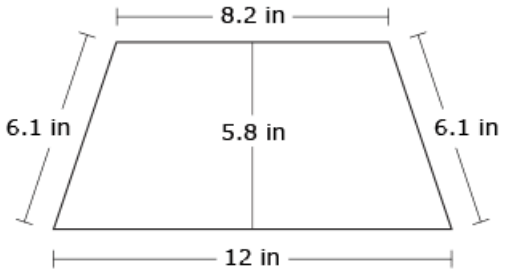
Question 3:

A segmental paver is installing a patio using tiles that are in the shape of a trapezoid.



In order to estimate the number of tiles needed, he must estimate the area of each one.

Given the dimensions shown, what is the area of each tile (to the nearest hundredth)?

square inches

Question 4:

A manufacturer ships a certain a product in boxes that are cubes $\frac{3}{4}$ of a foot on each side. The boxes are shipped in large containers that hold 8 layers of boxes, with each layer consisting of 28 rows of 12 boxes.

What is the volume of the shipping container?

a. 2,688 cubic feet

b. 2,016 cubic feet

c. 1,512 cubic feet

d. 1,134 cubic feet

Question 5:

A marine biologist needs a 1,200-gallon tank to hold the fish she will study (1,200 gallons = 160 cubic feet).

If the ideal height for the tank is 4 feet tall, what will be the area of the base?

square feet

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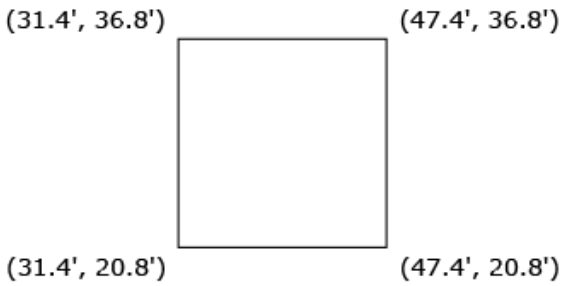
Question 6:

An architect is looking at a floor plan, and needs to determine whether a certain room is square or rectangular. The coordinates of the corners of the room are the distance, in feet, from the corner of the plan.



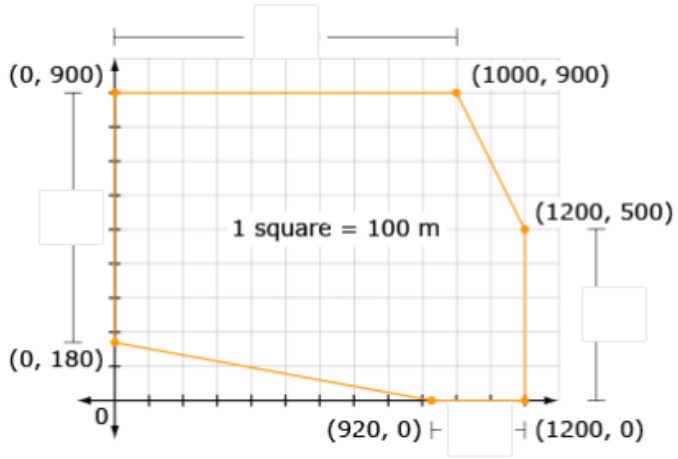
Based on this drawing, the longest sides of the room are _____ feet long, and the room is _____.

a. square
b. rectangle

Question 7:

A developer is considering a piece of land with a non-rectangular shape. The diagram shows the coordinates of each boundary post.

Indicate the length of each of the marked sides.



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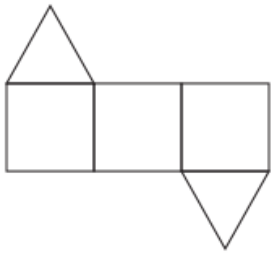
Question 8:

A manufacturer is designing a package for shipping a product. The net below shows the package before it is folded together and sealed.



What is the name for the resulting shape?

a. cube

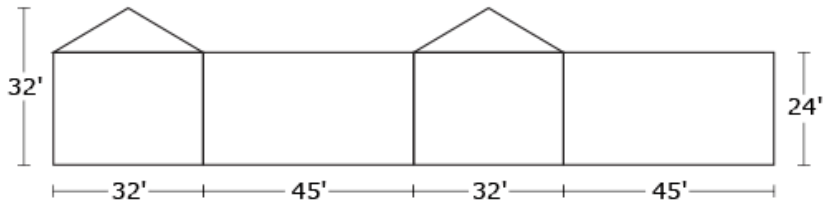
b. rectangular pyramid

c. triangular prism

d. triangular pyramid

Question 9:

A contractor is bidding on a house-painting job. To determine the amount of paint needed, he must calculate the area to be painted. The net below shows the walls that need to be painted (ignoring windows and doors).



What is the total area to be painted?

square feet

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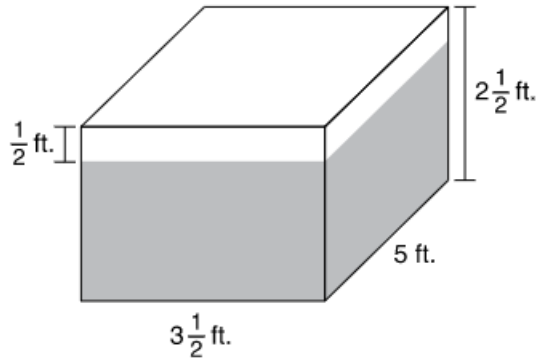
Question 10:

The diagram below shows the dimensions of a container of sand that is shaped like a rectangular prism. The container is filled up to $\frac{1}{2}$ foot from its top.



What is the volume of the sand in the container?

a. 30 cubic feet

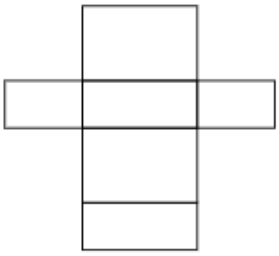
b. 35 cubic feet

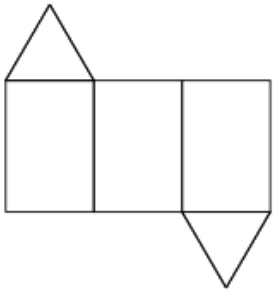
c. $43\frac{1}{2}$ cubic feet

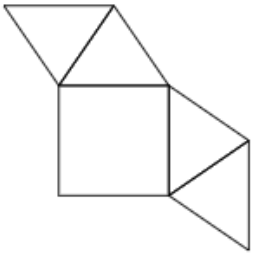
d. $43\frac{3}{4}$ cubic feet

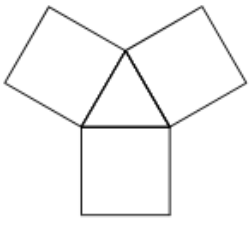
Question 11:

Which figure shows the net of a pyramid?

a. 

c. 

b. 

d. 

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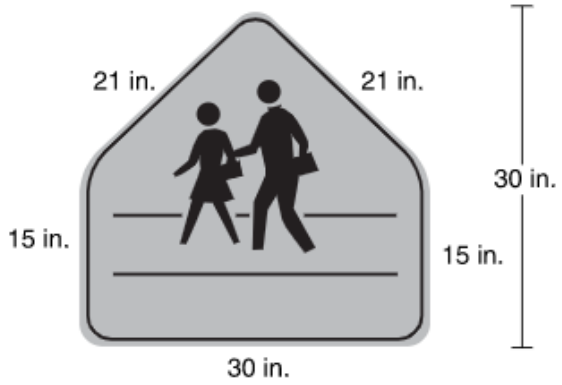
Question 12:

The figure below shows the approximate dimensions of a school crossing sign.



Based on these dimensions, what is the approximate area of the sign to the nearest square inch?

square inches

Question 13:

Amanda has a small wooden box that is in the shape of a rectangular prism. It is 4 inches tall, 2 inches wide, and $1\frac{1}{2}$ inches long.

What is the volume, in cubic inches, of the box?

cubic inches

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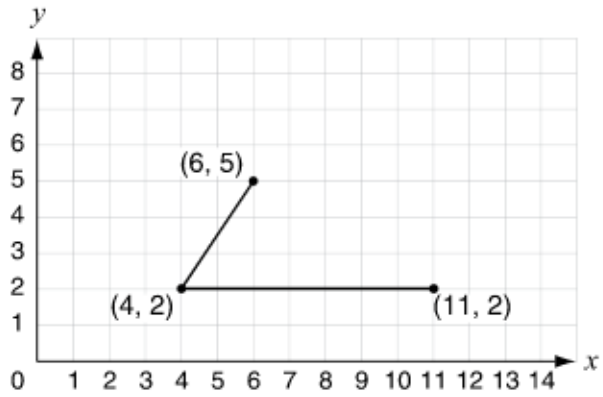
Question 14:

Two sides of a parallelogram are shown on the coordinate plane below.

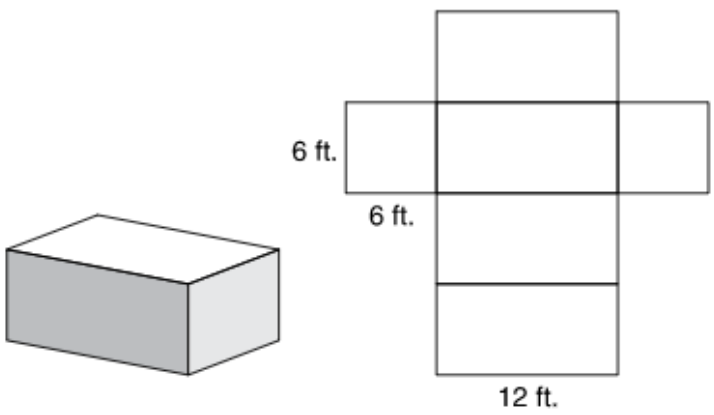


Write the coordinates of the fourth vertex of the parallelogram.

(,)

Question 15:

The diagram below shows a rectangular prism and its net.



What is the surface area, in square feet, of the rectangular prism?

sq ft

Stop