1.

The chart shows a set of three-dimensional objects and possible shapes for their two-dimensional cross sections.

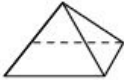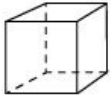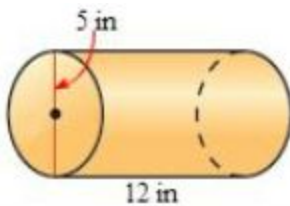For each object, select the shapes that could be cross sections of that object.

- Select the appropriate empty spaces.

- You may select more than one box in each row.

Write H if it would be the shape of a horizontal cross section, V if it would be the result of a Vertical cross section, and X if you can not obtain the cross section from slicing the 3 dimensional object.
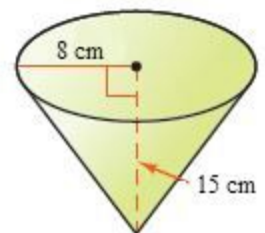
3-Dimensional Objects	2-Dimensional Cross-Sections		
	◯	△	▢
(cylinder)			
(pyramid)			
(cube)			

2.   Draw a net for the cylinder. Then use the net to find the surface area.

5 in

12 in

3.   A.   Find the lateral area of the cone. Leave your answer in terms of pi.

8 cm

15 cm

B.   Find the exact surface area of the cone. Leave your answer in terms of pi.

C.   Find the approximate surface area of the cone. Round your final answer to the nearest whole number.

4.

A cylindrical can of cocoa has the dimensions shown at the right. What is the approximate surface area available for the label?

2 in

5. If your cocoa company has a roll of paper which is 5 ft wide and 50 ft long, what is the maximum number of labels you could print for the problem above?

6.   The population of a nearby county is 92,024. The dimensions of the county are shown at the right. What is the population density of the county?

7 mi

12 mi

6 mi

12 mi
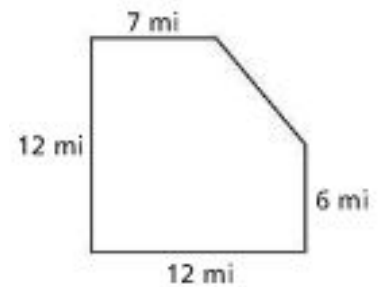
7. What would be the area of a neighboring city that is a similar shape but scaled up by a factor of 6? What is the square miles of this neighboring city?

8.   Solve for x. Fill in the boxes with the appropriate numbers from the list below.

$e^{4x} = 2$

x = ☐ ln ☐

$\frac{1}{2}$ $\frac{1}{3}$ $\frac{1}{4}$ 2   3   4

9.   If the space shuttle can travel at 17000 miles per hour, what is its speed in meters per second?

10.   You decide you want to carry a boulder home from the beach. It is 30 centimeters on each side, and has a volume of 27,000 cm³. It is made of granite, which has a typical density of 2.8 g/cm³. How much will this boulder weigh to the nearest pound? *(hint: find the mass)*
Will you be able to carry it by yourself?

11.

Find the surface area of the pyramid.

8 in

11 in
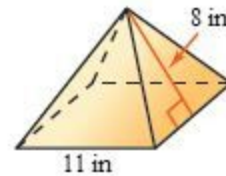
The surface area of the pyramid is ☐ in².
(Type a whole number.)

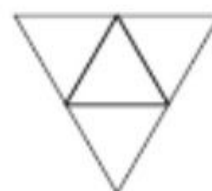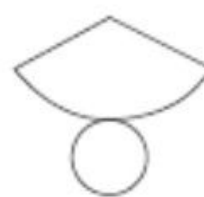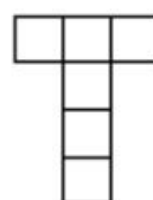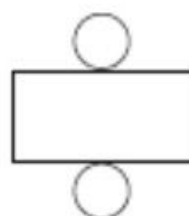12. Formula for the Surface Area of a Cone is $SA = \pi r^2 + \pi r l$, *where l is the slant height (11cm).*
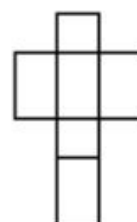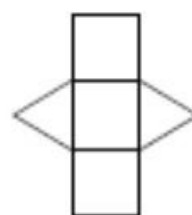
Find the surface area of the cone in terms of π.

11 cm

10 cm

The surface area of the cone is ☐ cm².
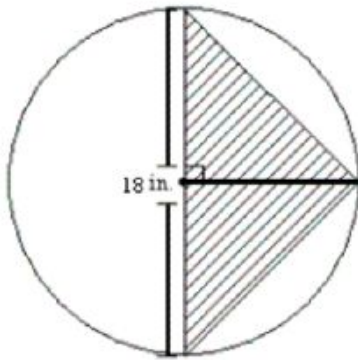(Simplify your answer. Type an exact answer in terms of π.)

13.
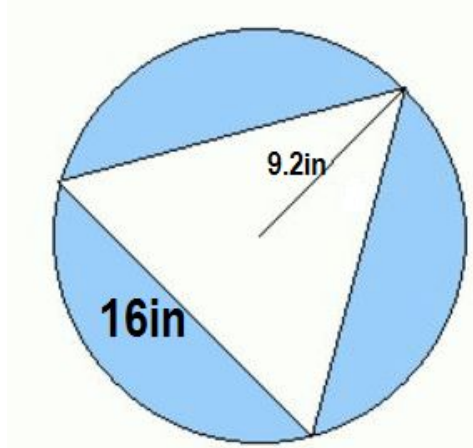
Join each shape to the matching net.

14. A. Player 1 has the dart board above. What is the probability of getting a dart in the dark shaded region?

Find the probability that a point chosen at random will lie in the shaded area.

Player 2 has the following dart board. What is the probability of getting a dart in the shaded area. (Hint: Look for pythagorean theorem.)

Would this be a fair game?

15. Solve for x:

$\frac{1}{4}log_5(x) = D$