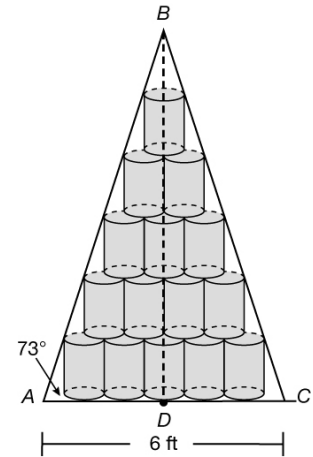


Store Displays

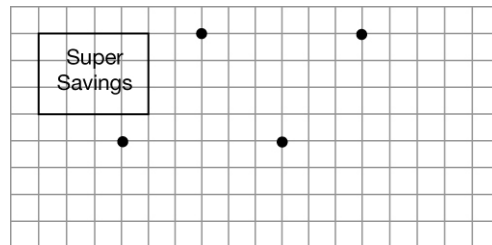
Store displays are intended to attract customers to special products. Some such displays incorporate stacking patterns.

1. A store display has the shape of an isosceles triangle like the one shown.
 - a. Write a trigonometric equation that involves the measure of $\angle A$ that shows how tall the display is.

- b. Use a trigonometric ratio to find BD to the nearest tenth of a foot. Show your work.



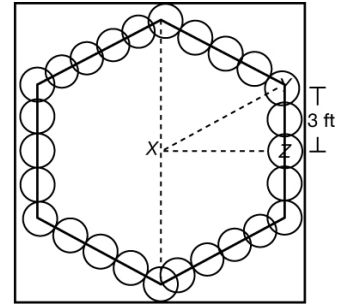
2. This grid shows a banner on the ceiling in a supermarket. The banner shown below is one that managers want customers to see repeated in a line across the entrance to the store.



- a. On this grid, use translations to make four more banners whose upper left corners are at each black dot.

- b. Explain why each rectangular banner is congruent to the others.

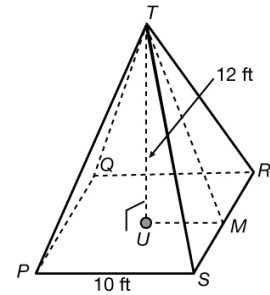
3. This diagram shows the bottom layer of a store display of paper products in a view from the top. The polygon is a regular polygon. $m\angle = 90^\circ$



- a. Identify the polygon and find $m\angle YXZ$.

- b. Find the area of the polygon bounded by the solid line segments. Give the answer in simplest radical form and to the nearest tenth of a square foot.

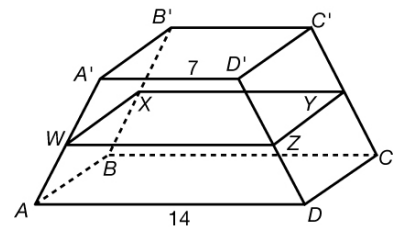
4. Outside of a toy store in a shopping mall, workers set up a large pyramid with displays of the store's toys.



- a. List and find the information needed to calculate the lateral area of the pyramid. Justify the choices for the information needed.

- b. Find the lateral area of the pyramid. Show your work.

5. This diagram shows a display stand whose four upward sloping faces are congruent isosceles trapezoids.



- a. How long is midsegment \overline{WZ} ? Show your work.

- b. Explain why the midsegments, \overline{WZ} , \overline{ZY} , \overline{YX} , and \overline{XW} of the four upward sloping faces are equal in length.
