Assignment

Write

Draw an example of each term.

1. sector of a circle
2. segment of a circle

Remember

A sector of a circle is a region of the circle bounded by two radii and the included arc. Its area is a fraction of the area of the circle and can be calculated using the formula $A = (\pi r^2)\frac{m}{360°}$, where m is the measure of the central angle. A segment of a circle is a region of the circle bounded by a chord and the included arc. Its area can be found by subtracting the area of the triangle formed by the two radii and the chord from the area of the sector formed by the two radii and the included arc.

Practice

Use 3.14 for π. Round your answer to the nearest hundredth if necessary.

1. Abraj Al Bait Towers clock in Mecca, Saudi Arabia, has a clock face with a diameter of 43 meters.

    a. Determine the area of the sector formed by the minute hand and the hour hand when the time is 3:00.

    b. Determine the area of the sector formed by the minute hand and the hour hand when the time is 5:00.

2. A company has a circular card table with a 4-foot diameter. They want to remove a portion to provide a place for the dealer to stand as shown in the diagram. How much surface area of the table will be left for those who are sitting at the table?


120°
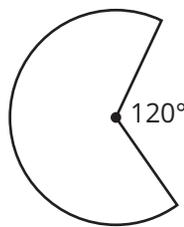
3. Geneva has a circular table with a 6-foot diameter that she would like to put in her new kitchen. In order for it to fit up against the wall, she must cut off the shaded portion of the table as shown in the diagram. The measure of the central angle is 100°. How much surface area will she lose when she removes this part of the table?

4.6 ft

1.9 ft
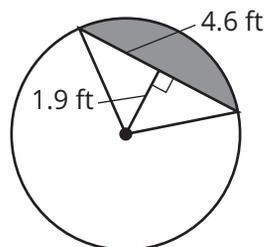
Stretch

Each circle in the figure shown has a radius of 1 inch. Calculate the area of the shaded region.
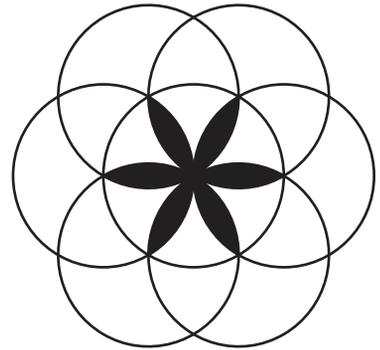
Review

1. In circle *A* shown, the radius of the circle is 20 millimeters and m∠*BDC* is 32°. Determine the length of $\overset{\frown}{BC}$. Round your answer to the nearest hundredth.

2. If $\theta = \frac{2\pi}{3}$ and $r = 8$, what is the length of the intercepted arc?

3. Andrew is flying a kite. The angle of elevation of the kite varies between 56° and 60°. Andrew has let out 15 m of string on the kite. Draw a picture to model this situation. Then, determine the minimum and maximum heights of the kite. Round the heights to the nearest tenth.

4. Determine side length *ZW* to the nearest tenth of a meter.
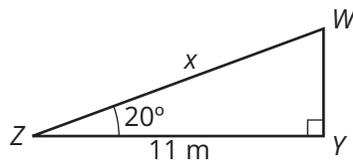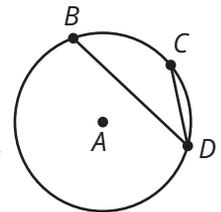
5. Solve for *x*.

   a. $5x + 34 = -2(1 - 7x)$

   b. $-\frac{4}{3}x + \frac{3}{5} = -2\frac{5}{6}x + \frac{7}{5}$