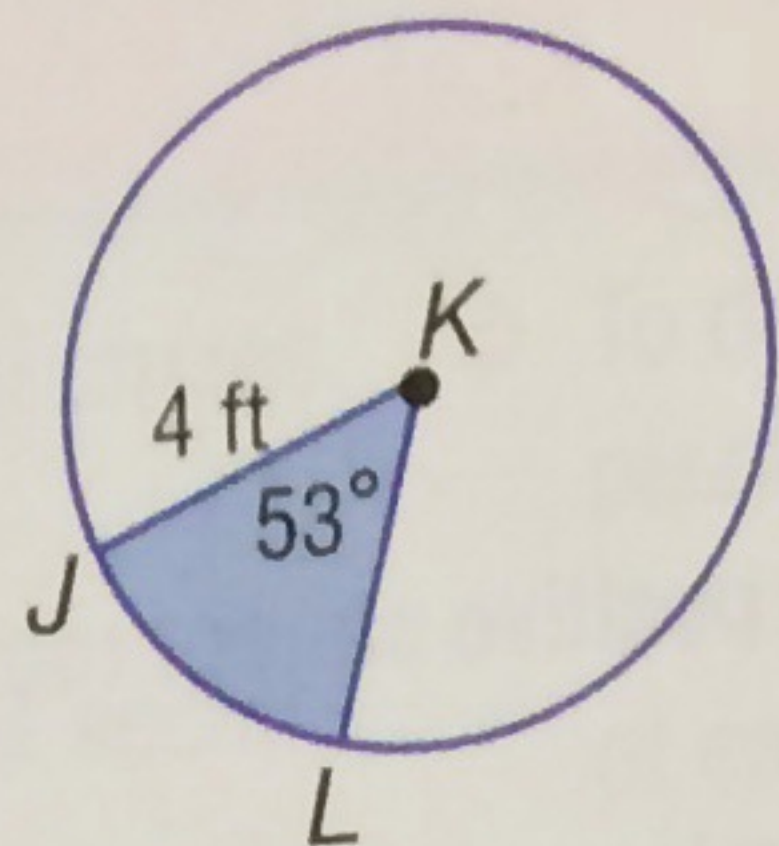
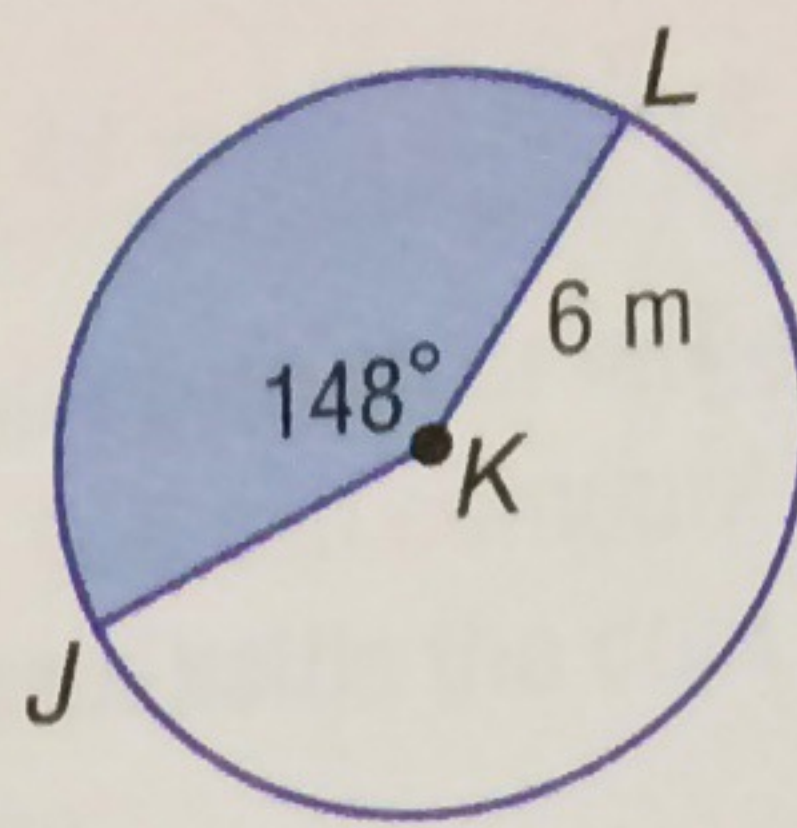


Find the area of the shaded sector. Round to the nearest tenth.

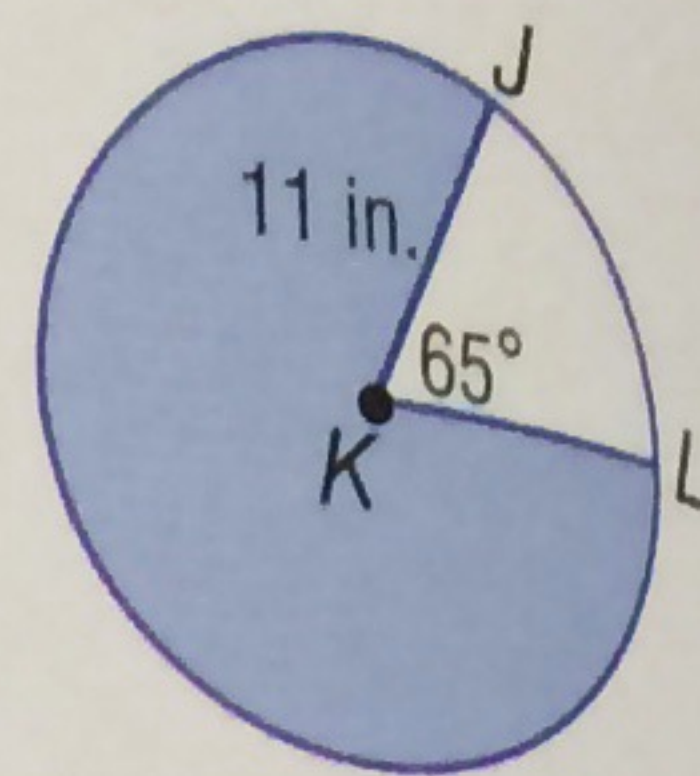
3A.



3B.



3C.



3D. **CRAFTS** The color wheel at the right is a tool that artists use to organize color schemes. If the diameter of the wheel is 10 inches and each of the 12 sections is congruent, find the approximate area covered by green hues.



### Check Your Understanding

= Step-by-Step Solutions begin on page R14.

#### Example 1

**CONSTRUCTION** Find the area of each circle. Round to the nearest tenth.

1.



2.



#### Example 2

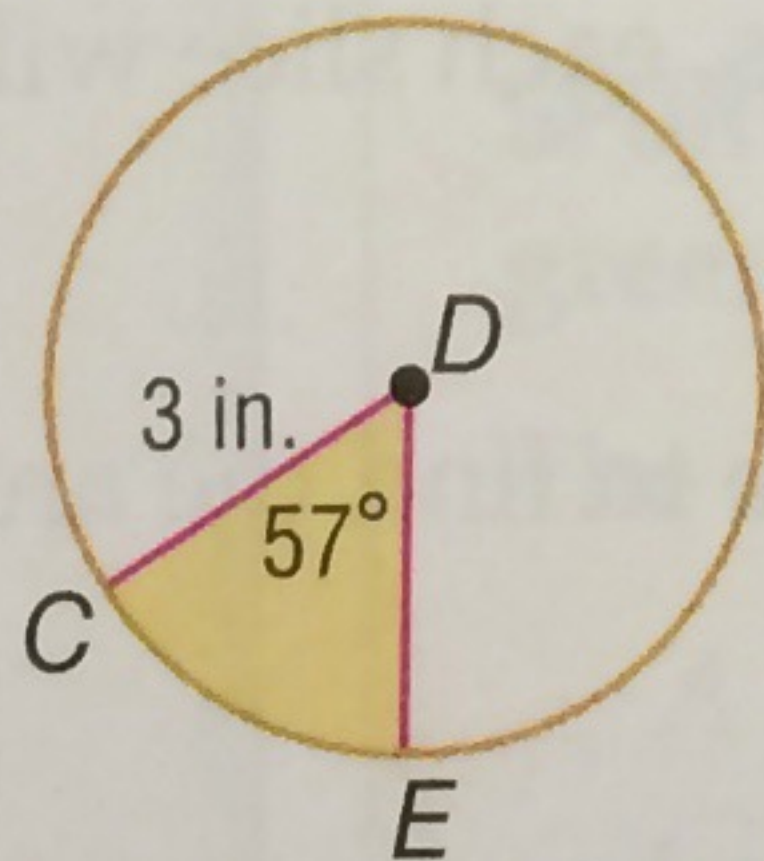
Find the indicated measure. Round to the nearest tenth.

3. Find the diameter of a circle with an area of 74 square millimeters.
4. The area of a circle is 88 square inches. Find the radius.

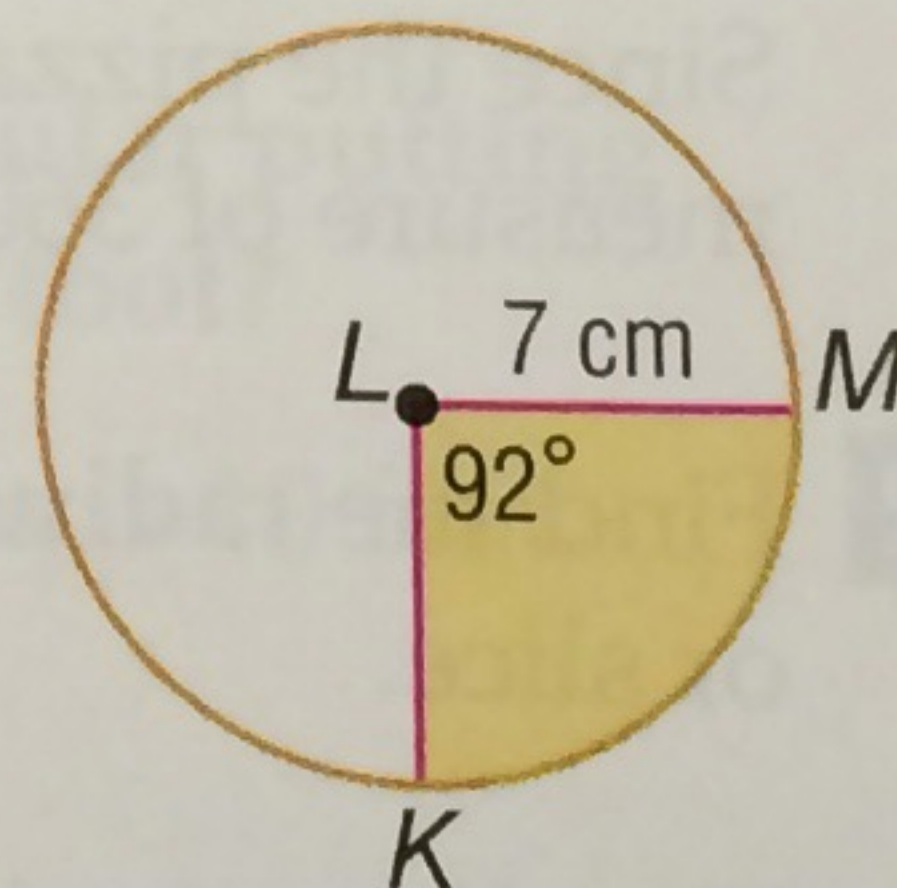
#### Example 3

Find the area of each shaded sector. Round to the nearest tenth.

5.



6.

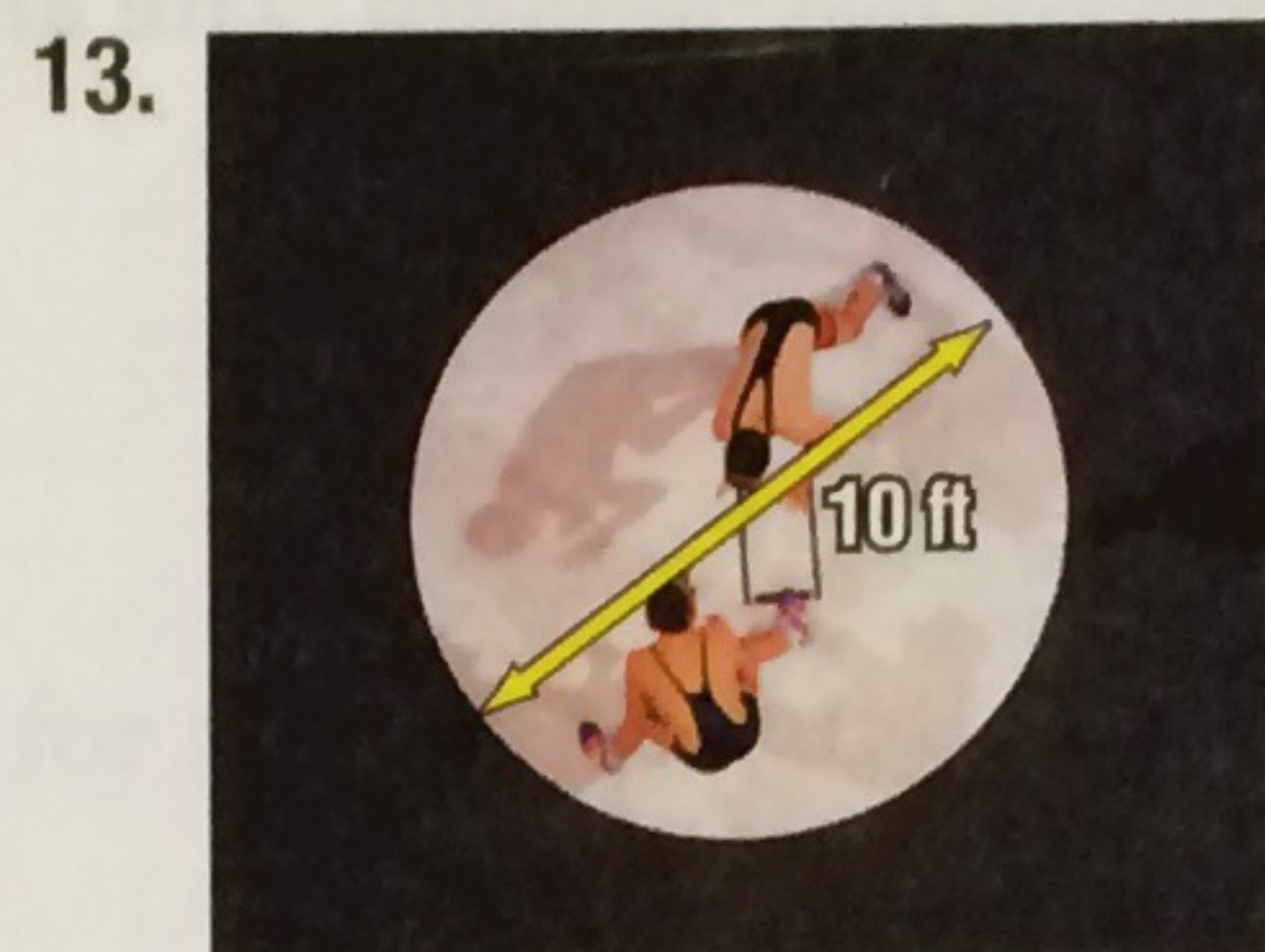
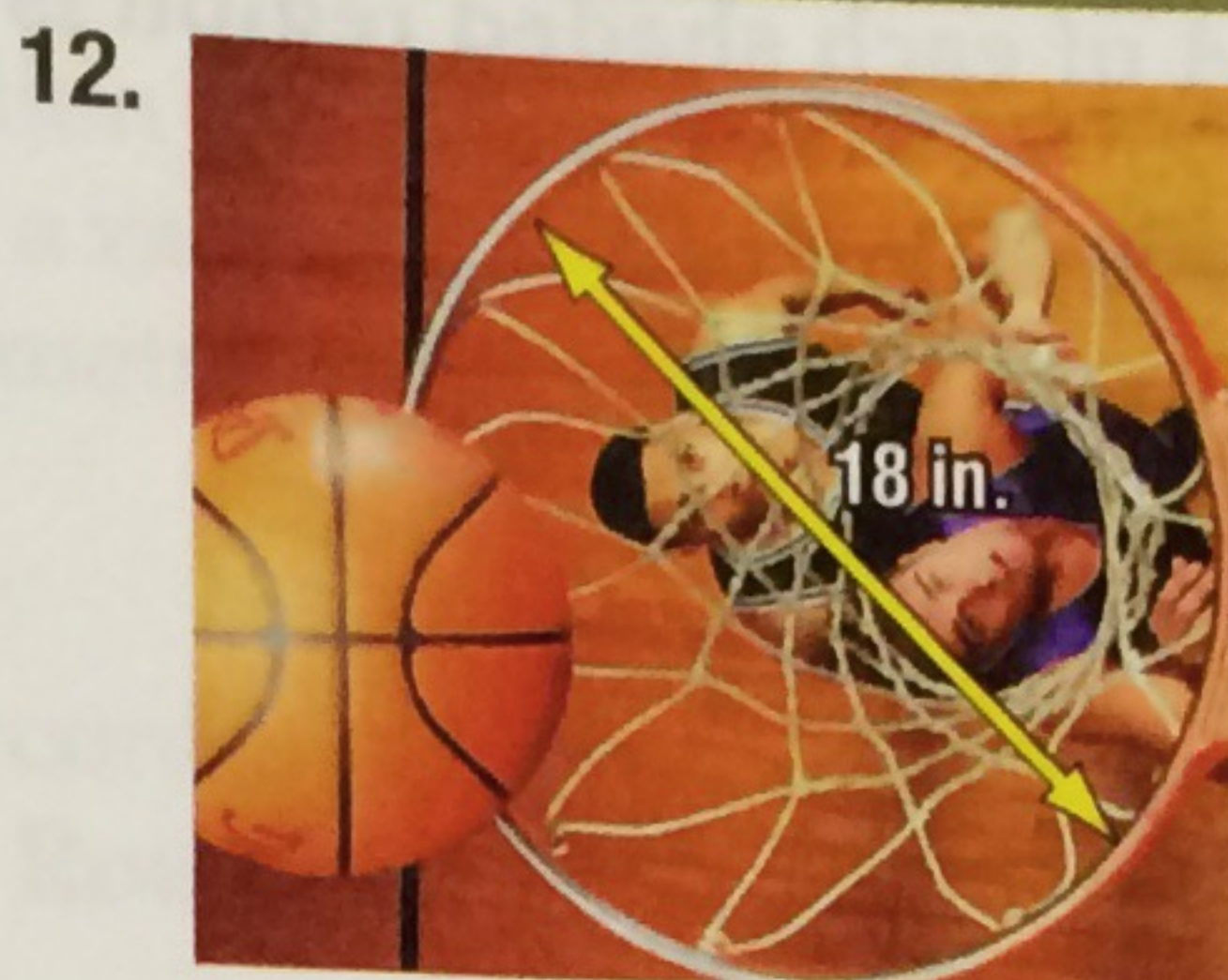
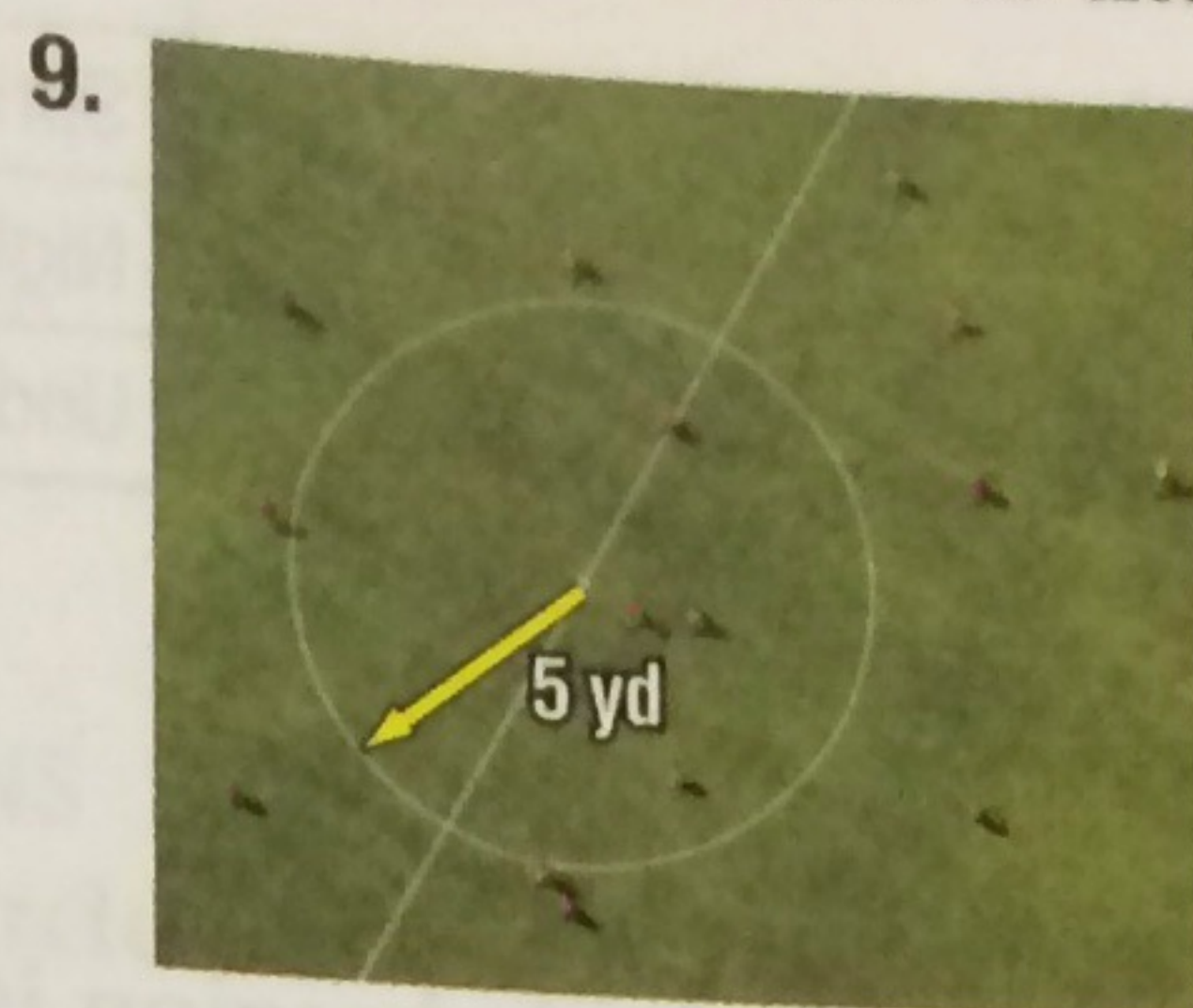
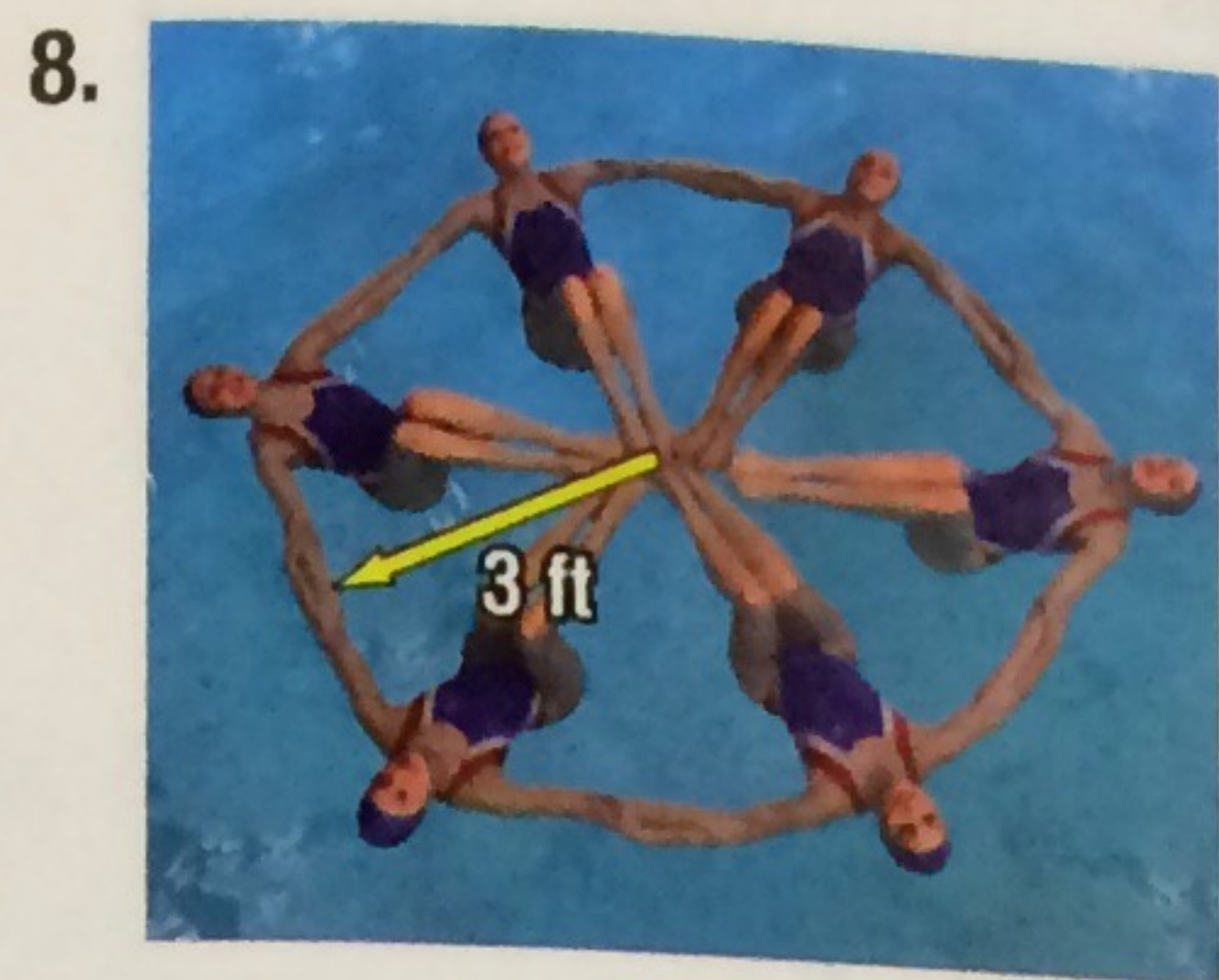


7. **BAKING** Chelsea is baking pies for a fundraiser at her school. She divides each 9-inch pie into 6 equal slices.
  - a. What is the area, in square inches, for each slice of pie?
  - b. If each slice costs \$0.25 to make and she sells 8 pies at \$1.25 for each slice, how much money will she raise?



Example 1

**CCSS MODELING** Find the area of each circle. Round to the nearest tenth.



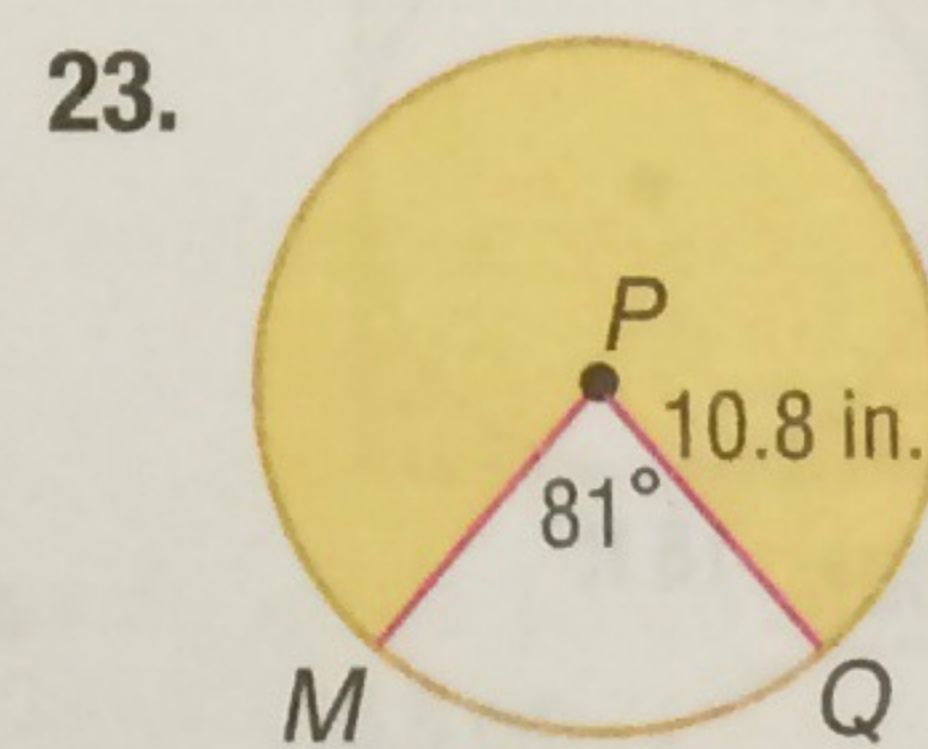
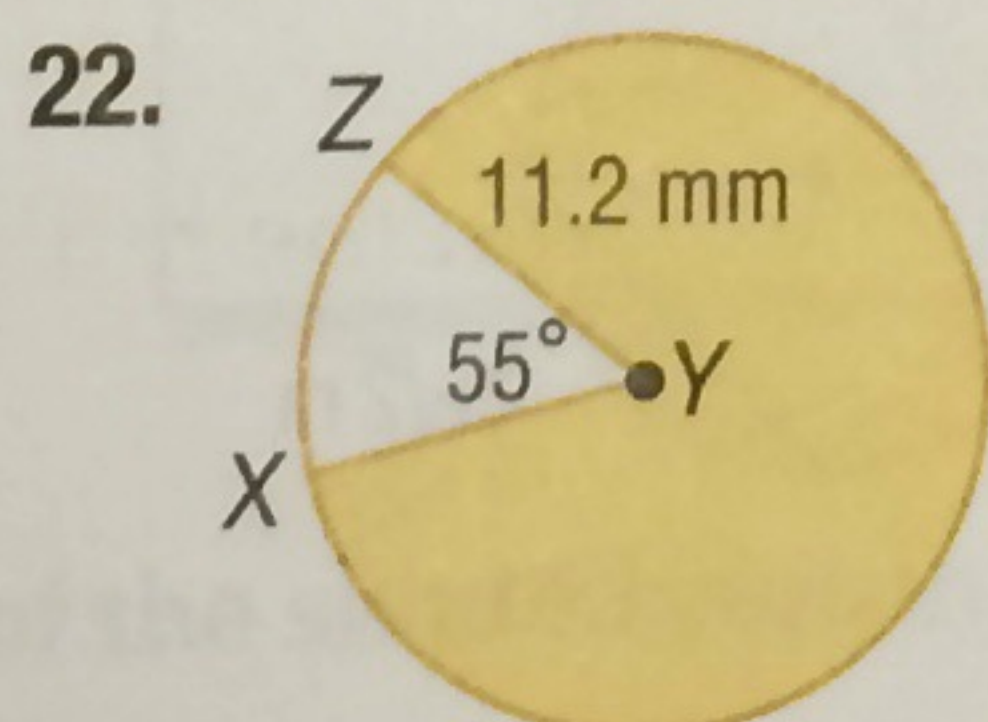
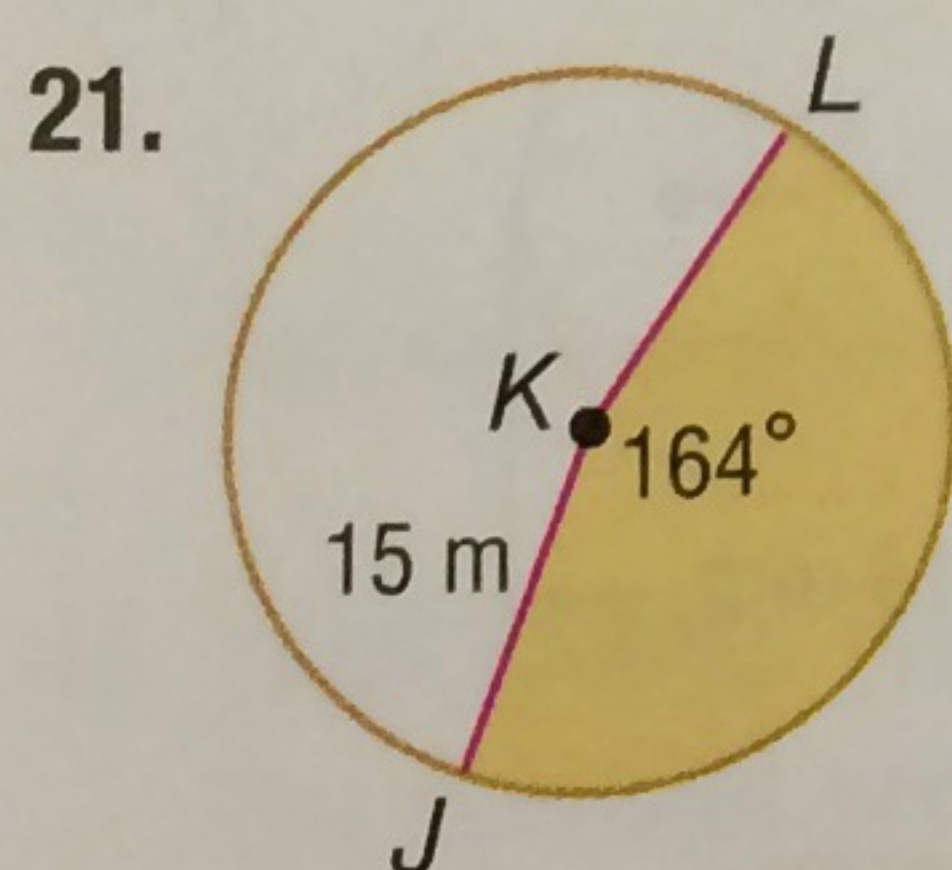
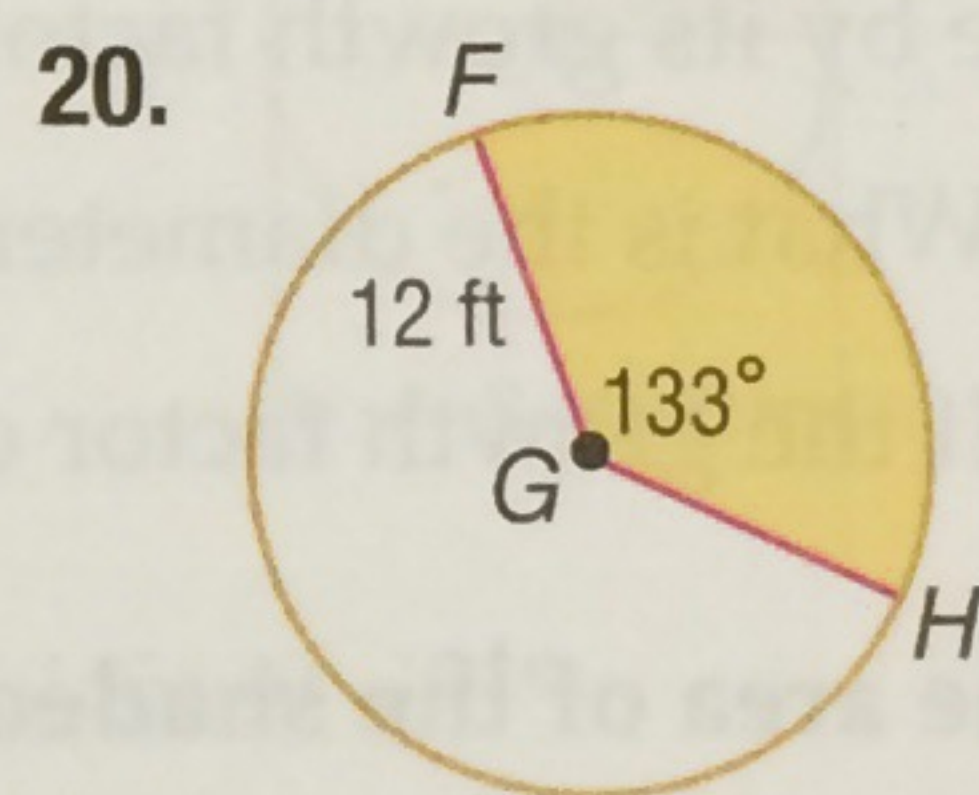
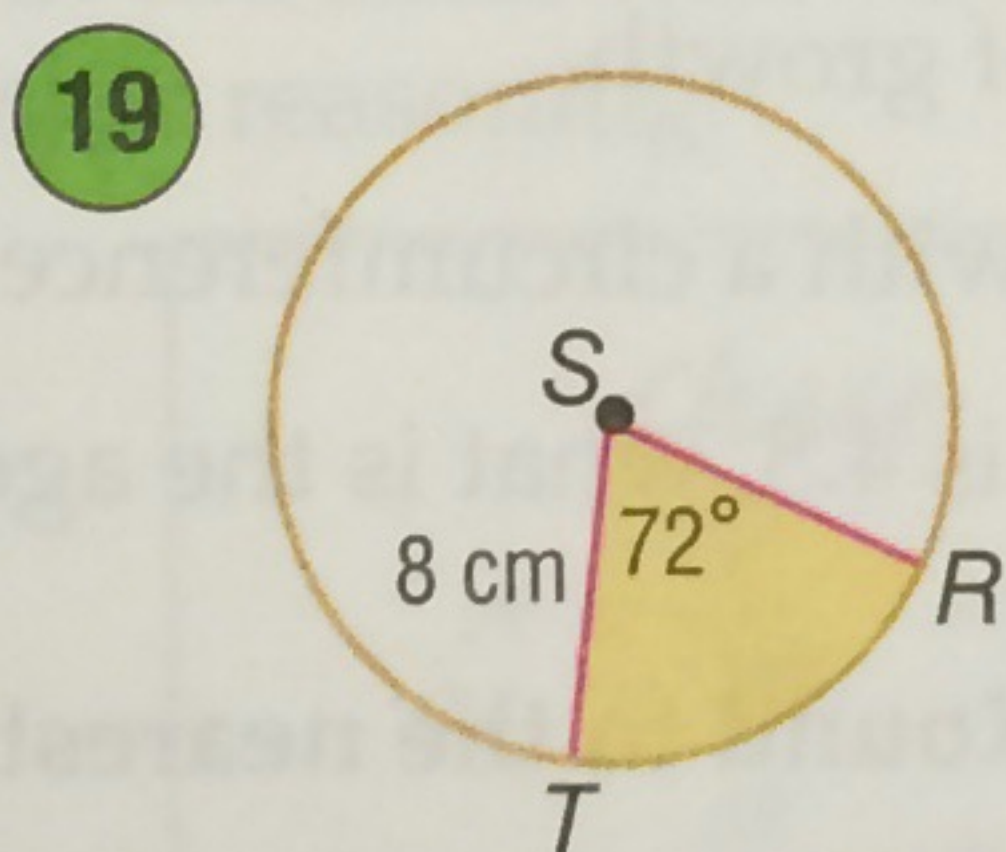
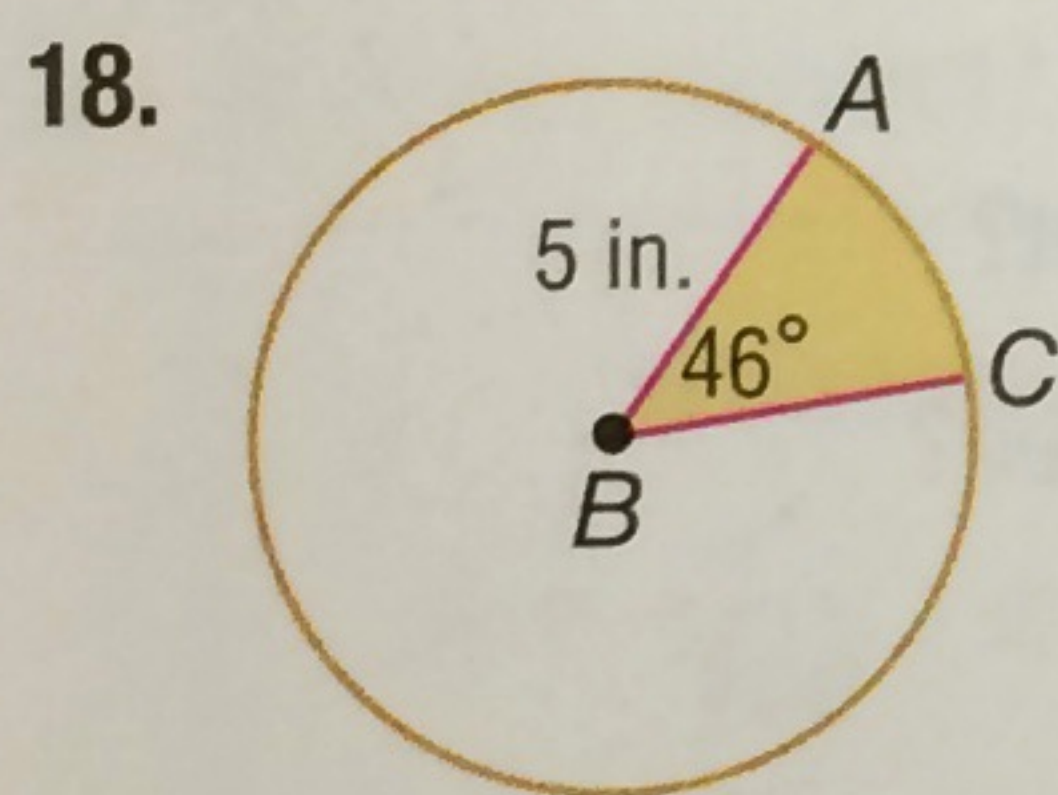
Example 2

Find the indicated measure. Round to the nearest tenth, if necessary.

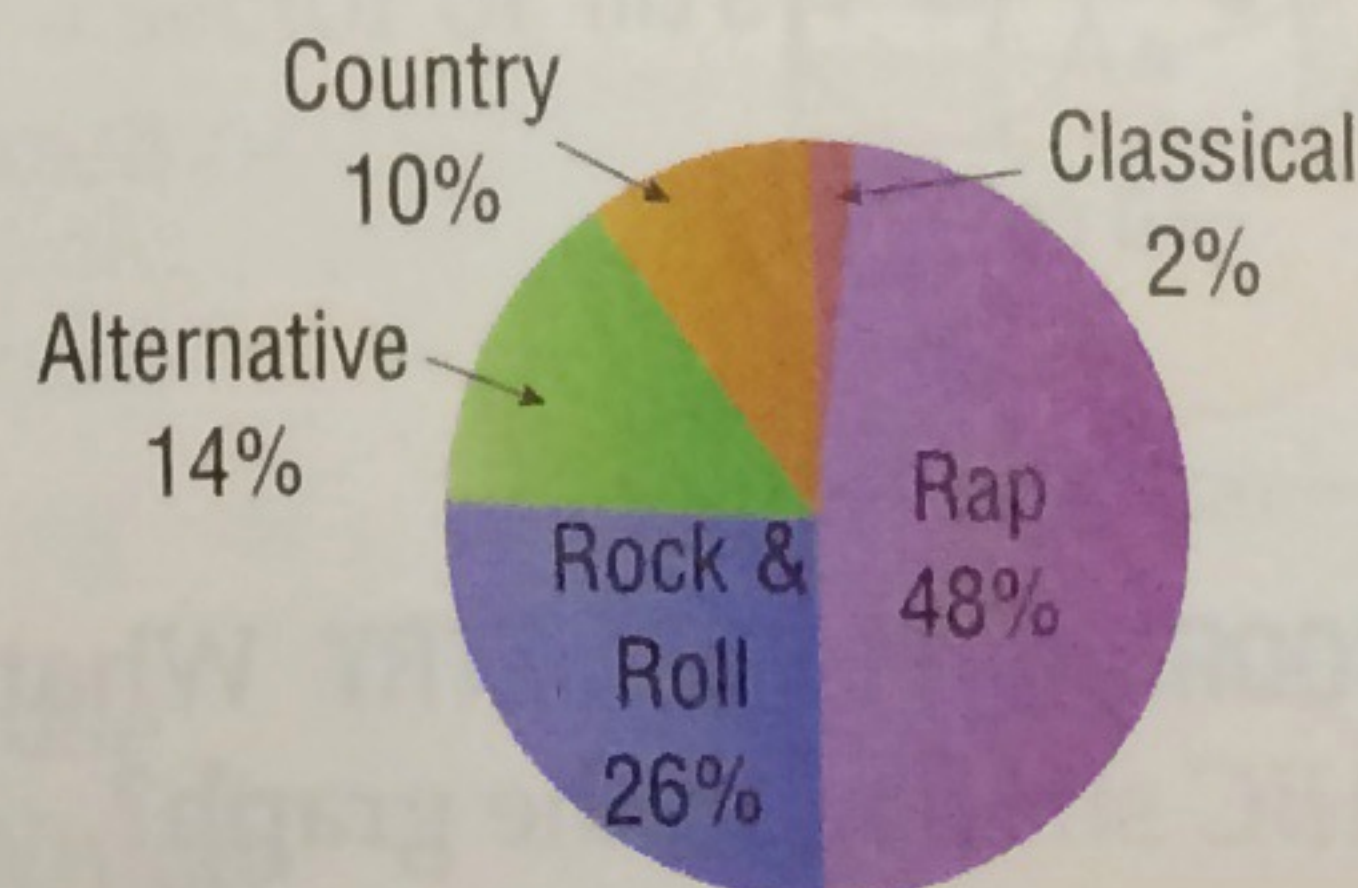
14. The area of a circle is 68 square centimeters. Find the diameter.
15. Find the diameter of a circle with an area of 94 square millimeters.
16. The area of a circle is 112 square inches. Find the radius.
17. Find the radius of a circle with an area of 206 square feet.

Example 3

Find the area of each shaded sector. Round to the nearest tenth, if necessary.



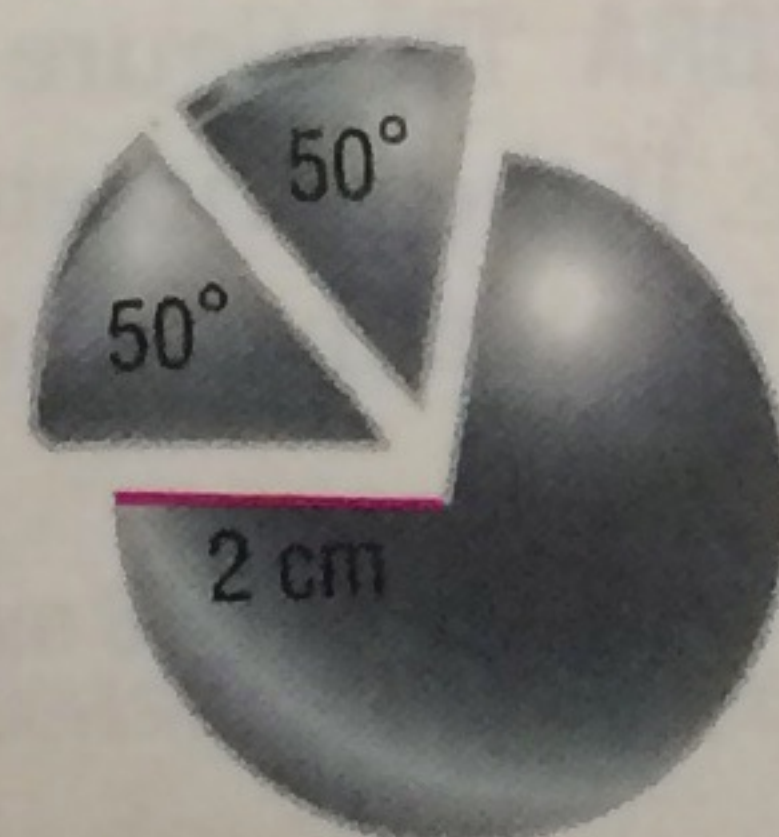
24. **MUSIC** The music preferences of students at Thomas Jefferson High are shown in the circle graph. Find the area of each sector and the degree measure of each intercepted arc if the radius of the circle is 1 unit.



25. **JEWELRY** A jeweler makes a pair of earrings by cutting two  $50^\circ$  sectors from a silver disk.

a. Find the area of each sector.

b. If the weight of the silver disk is 2.3 grams, how many milligrams does the silver wedge for each earring weigh?



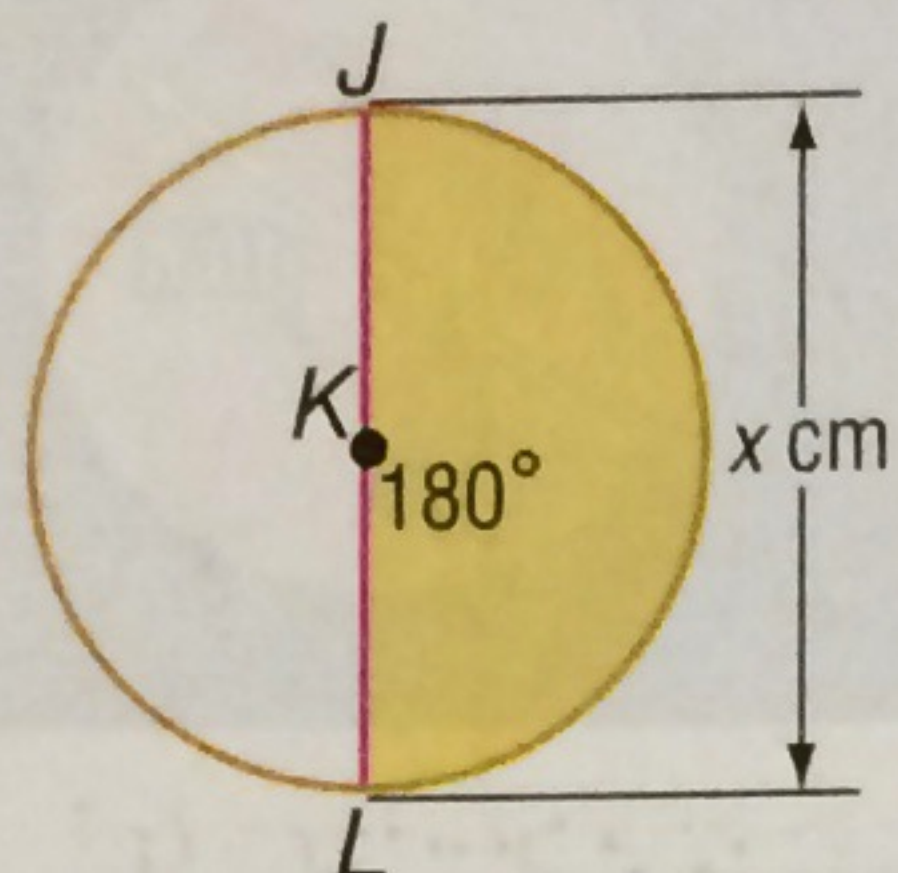
26. **PROM** The table shows the results of a survey of students to determine their preference for a prom theme.

Theme	Percent
An Evening of Stars	11
Mardi Gras	32
Springtime in Paris	8
Night in Times Square	47
Undecided	2

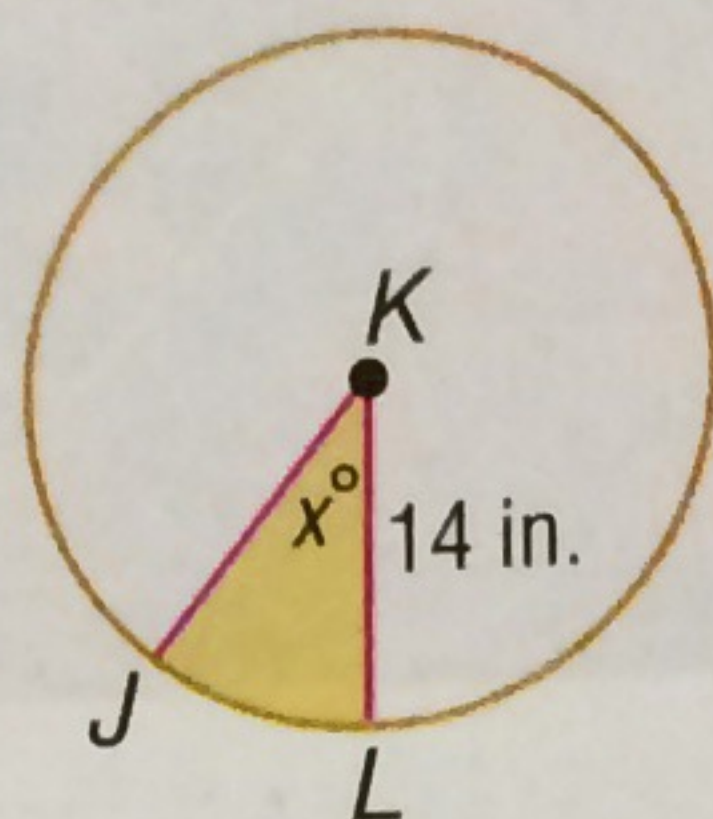
- Create a circle graph with a diameter of 2 inches to represent these data.
- Find the area of each theme's sector in your graph. Round to the nearest hundredth of an inch.

**CCSS SENSE-MAKING** The area  $A$  of each shaded region is given. Find  $x$ .

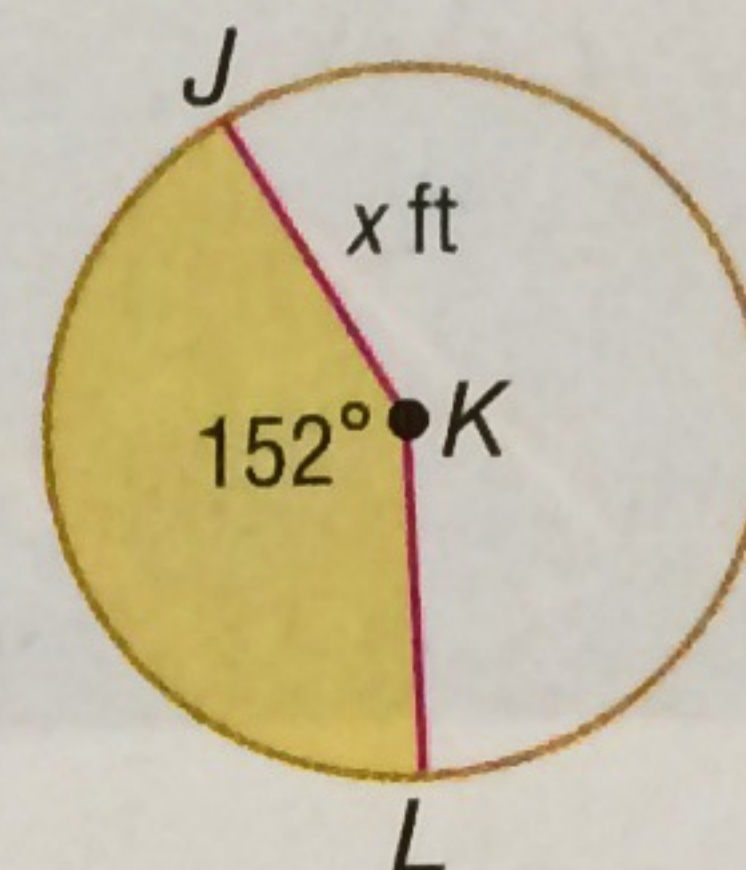
27.  $A = 66 \text{ cm}^2$



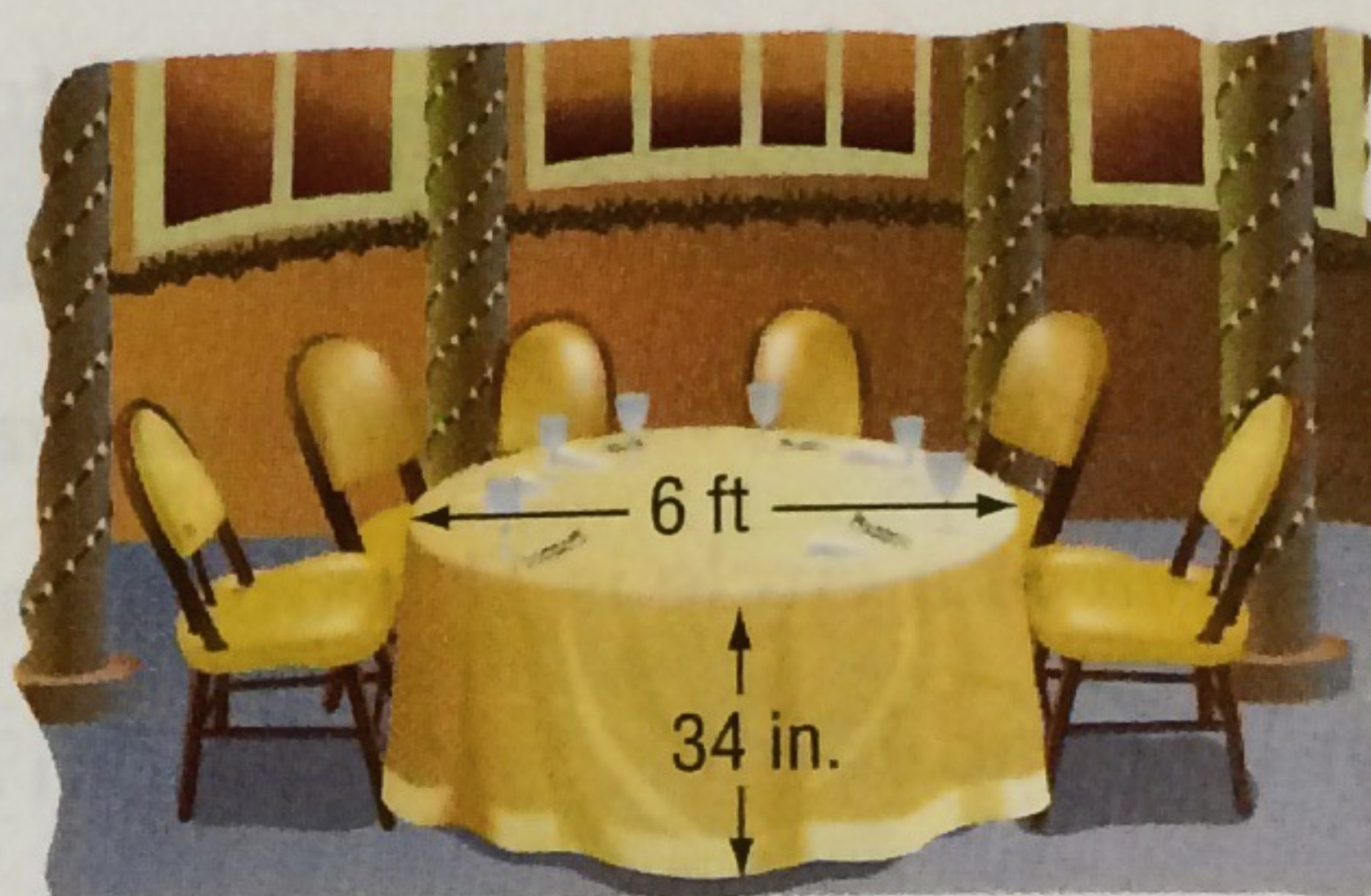
28.  $A = 94 \text{ in}^2$



29.  $A = 128 \text{ ft}^2$



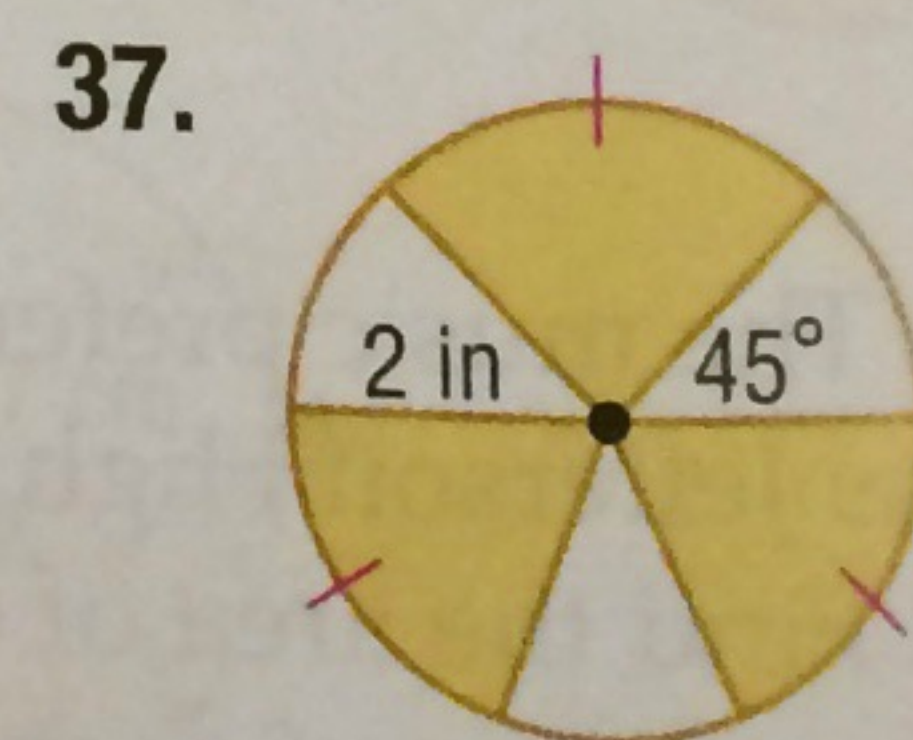
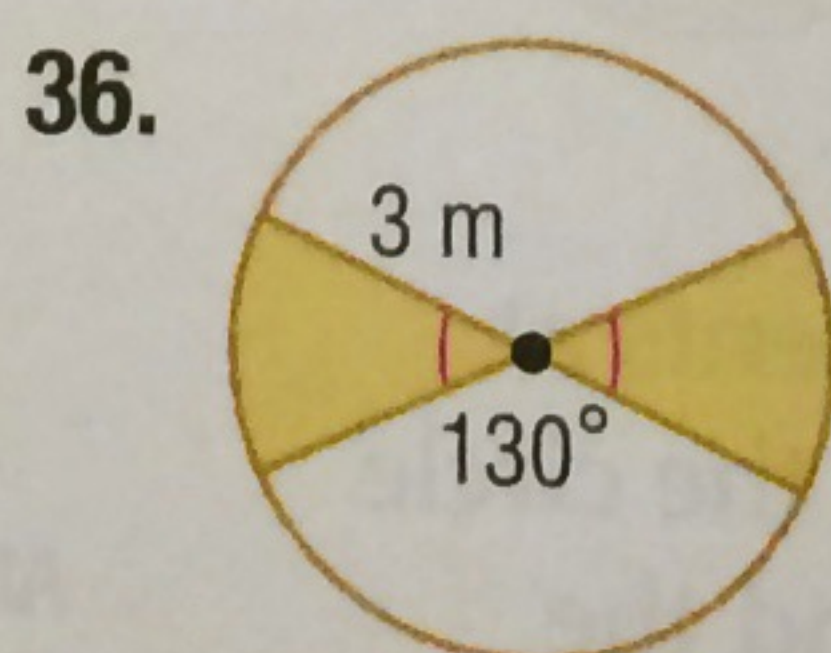
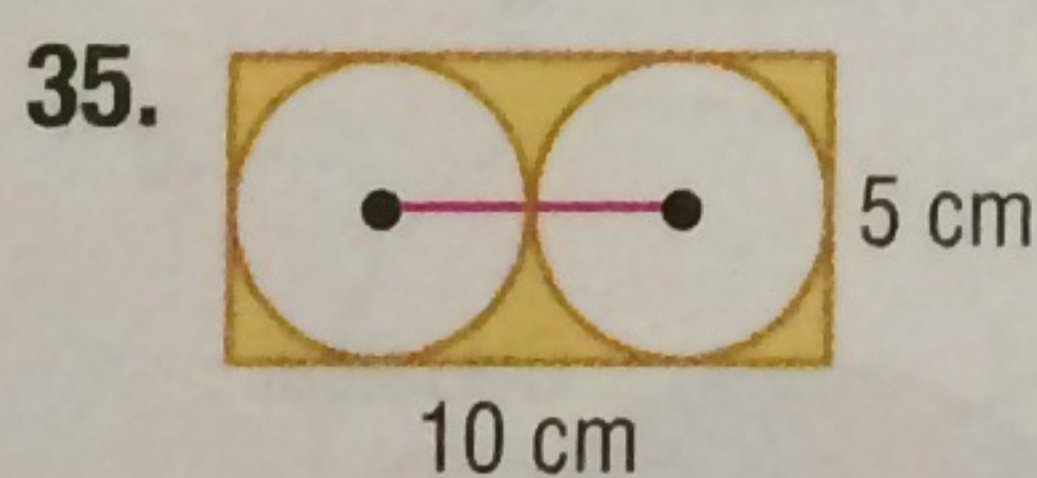
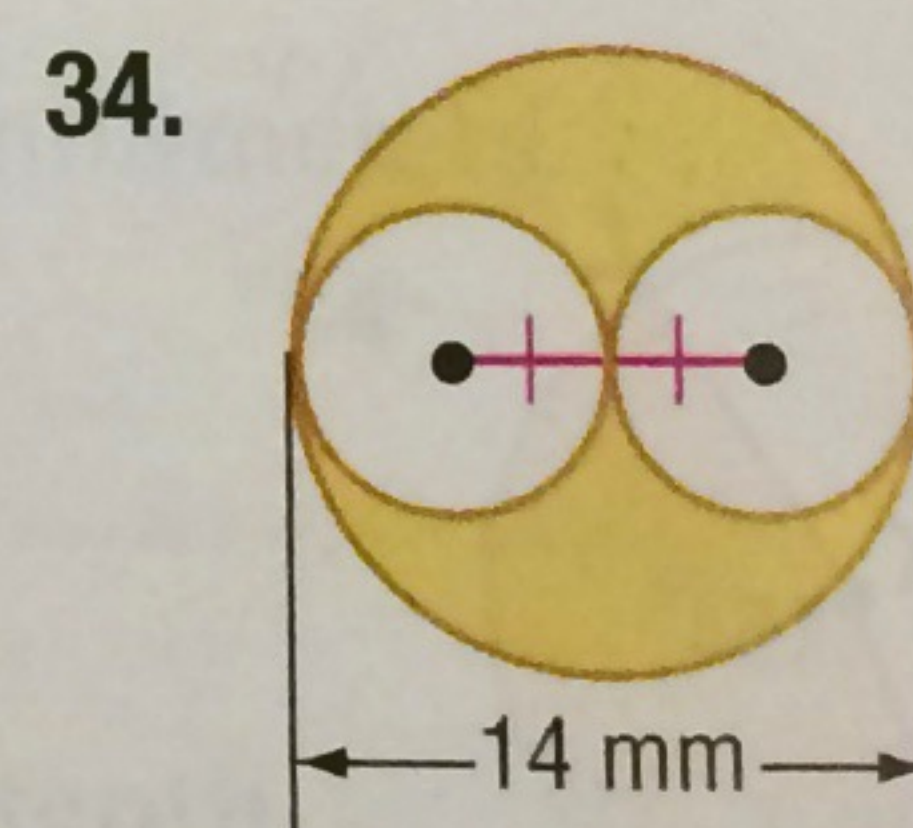
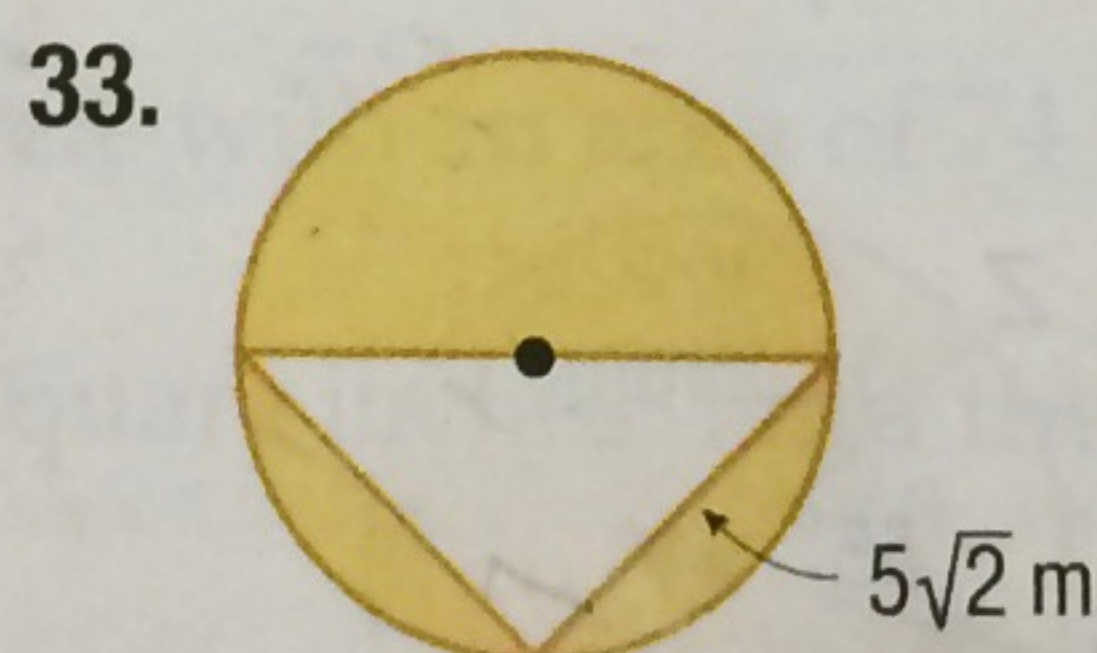
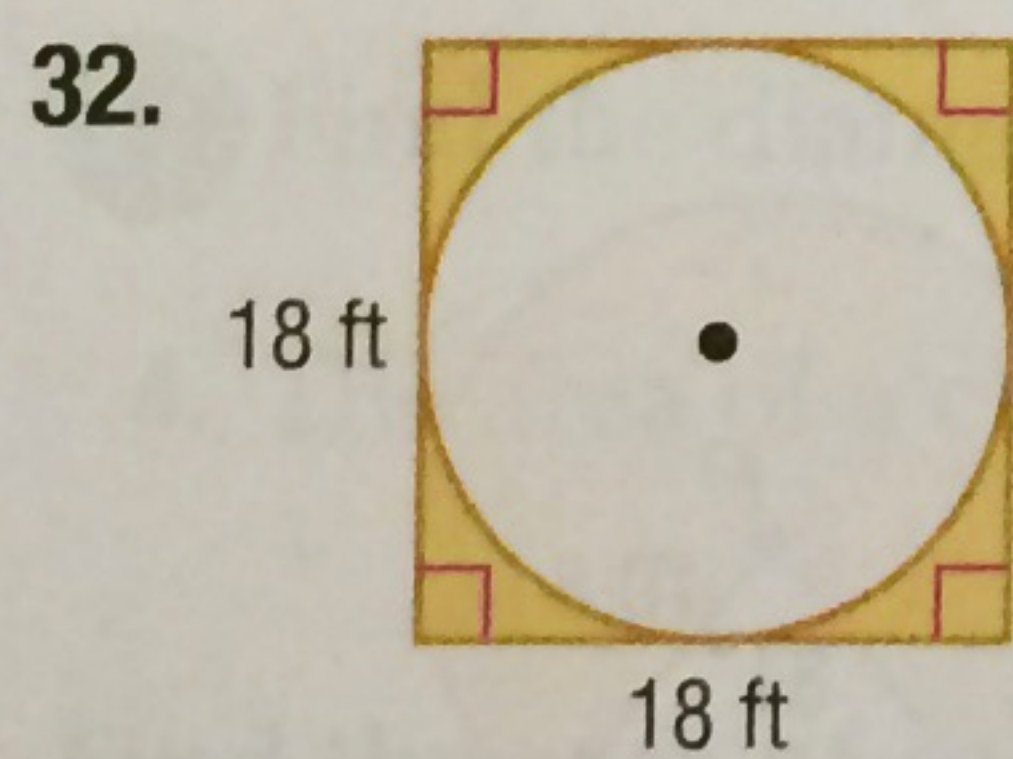
30. **CRAFTS** Luna is making tablecloths with the dimensions shown for a club banquet. Find the area of each tablecloth in square feet if each one is to just reach the floor.



31. **TREES** The age of a living tree can be determined by multiplying the diameter of the tree by its growth factor, or rate of growth.

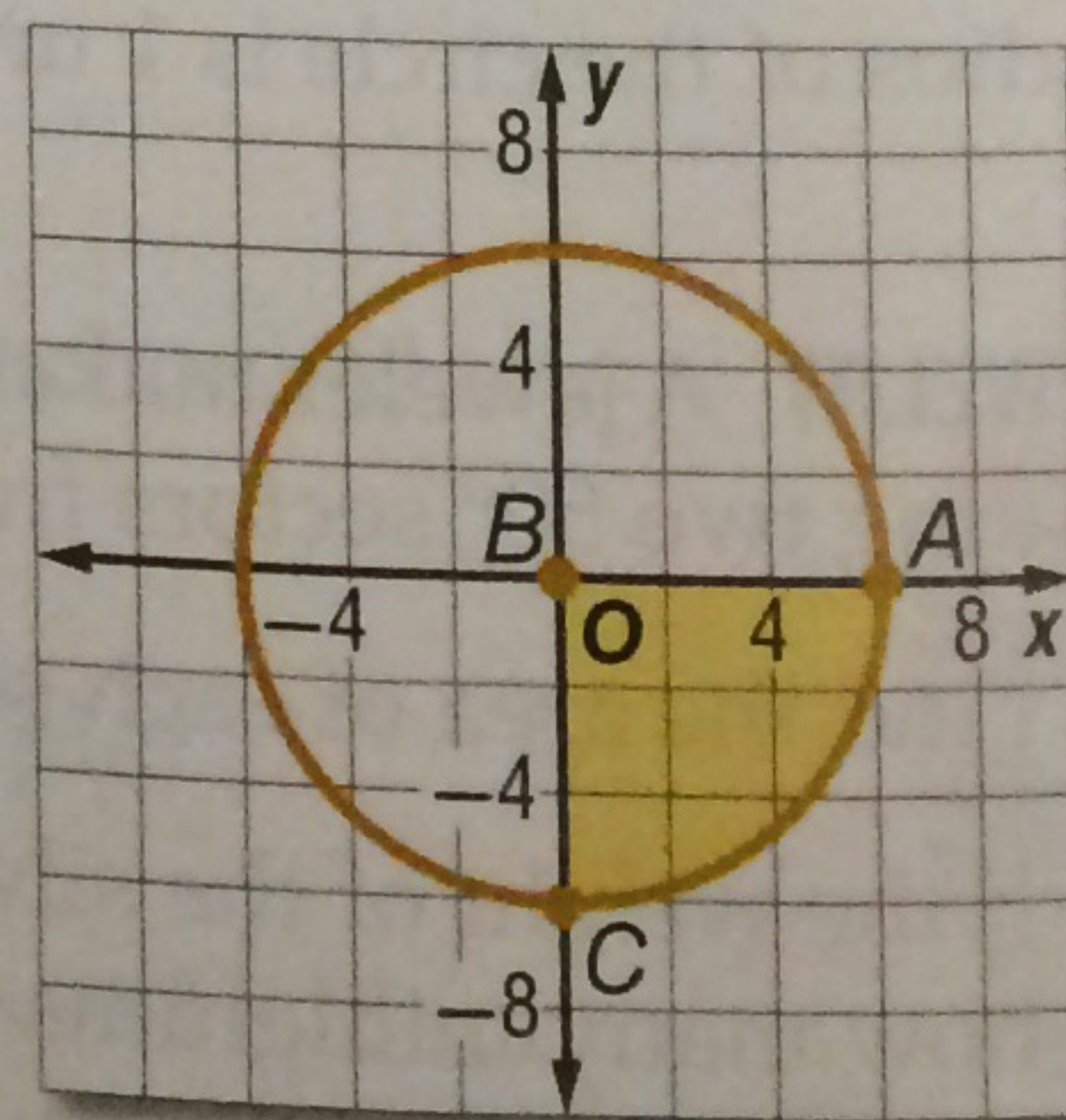
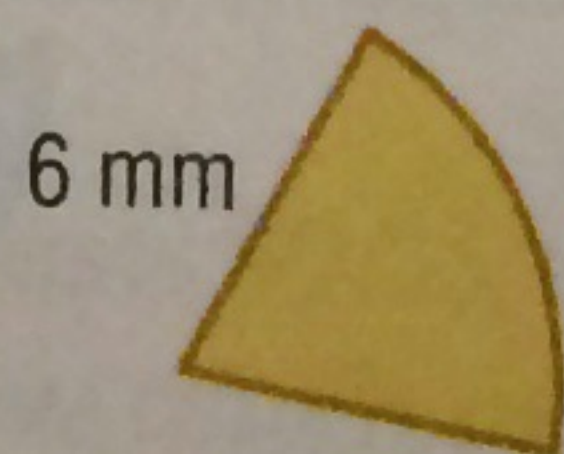
- What is the diameter of a tree with a circumference of 2.5 feet?
- If the growth factor of the tree is 4.5, what is the age of the tree?

Find the area of the shaded region. Round to the nearest tenth.



38. **COORDINATE GEOMETRY** What is the area of sector  $ABC$  shown on the graph?

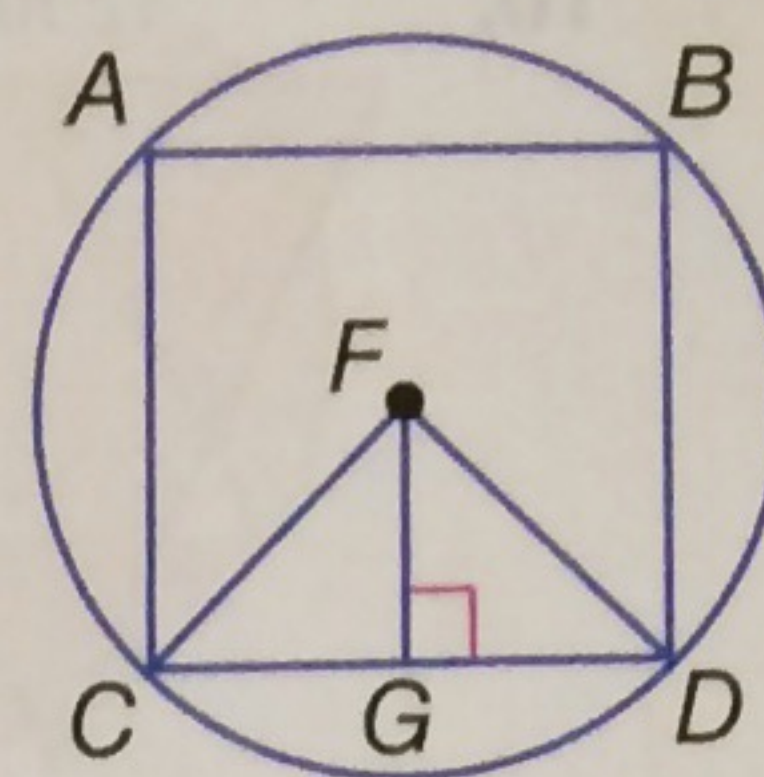
39. **ALGEBRA** The figure shown below is a sector of a circle. If the perimeter of the figure is 22 millimeters, find its area in square millimeters.



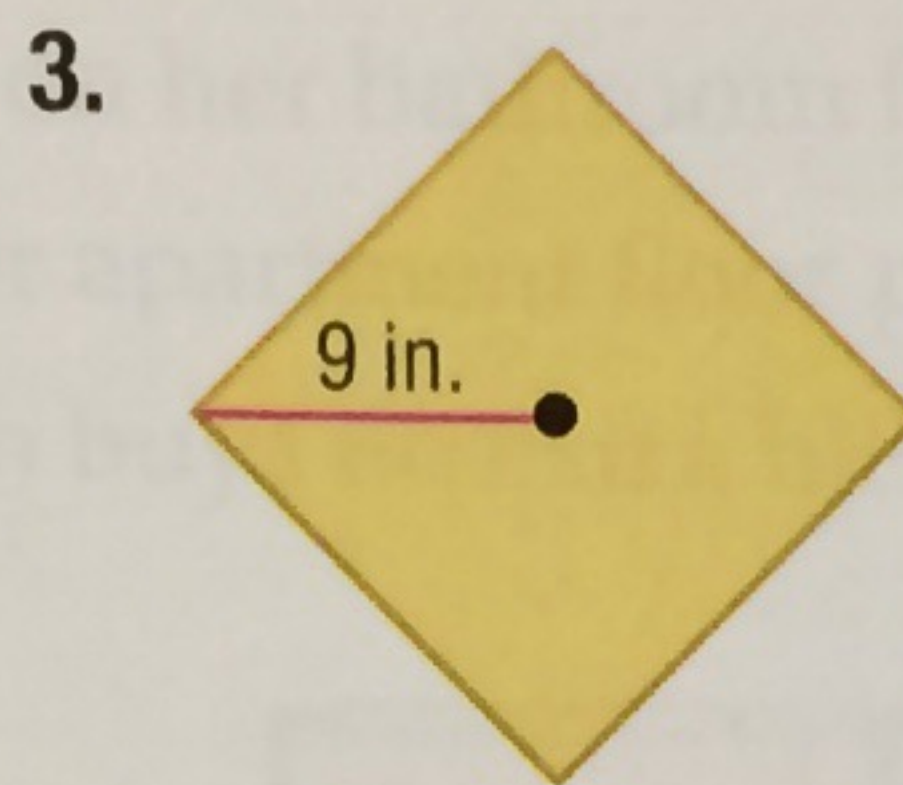
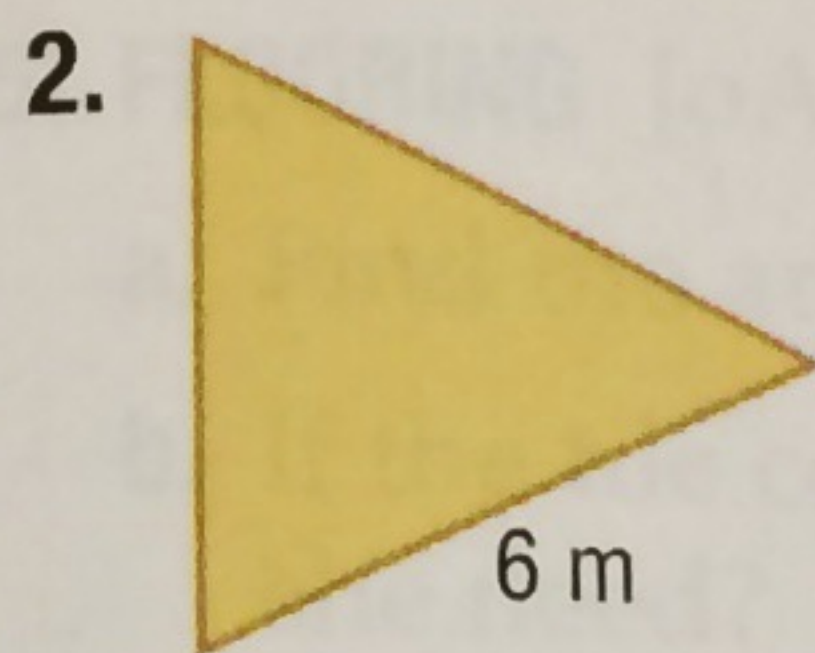


Example 1

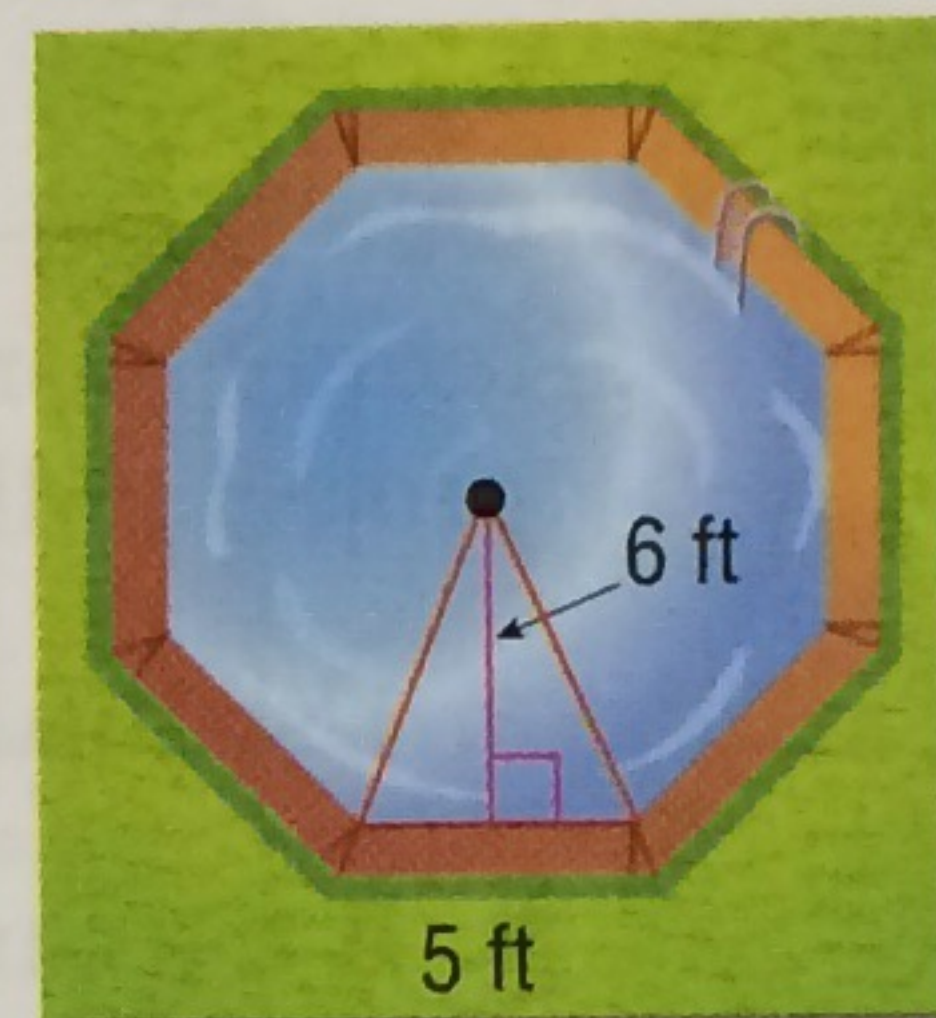
1. In the figure, square  $ABDC$  is inscribed in  $\odot F$ . Identify the center, a radius, an apothem, and a central angle of the polygon. Then find the measure of a central angle.



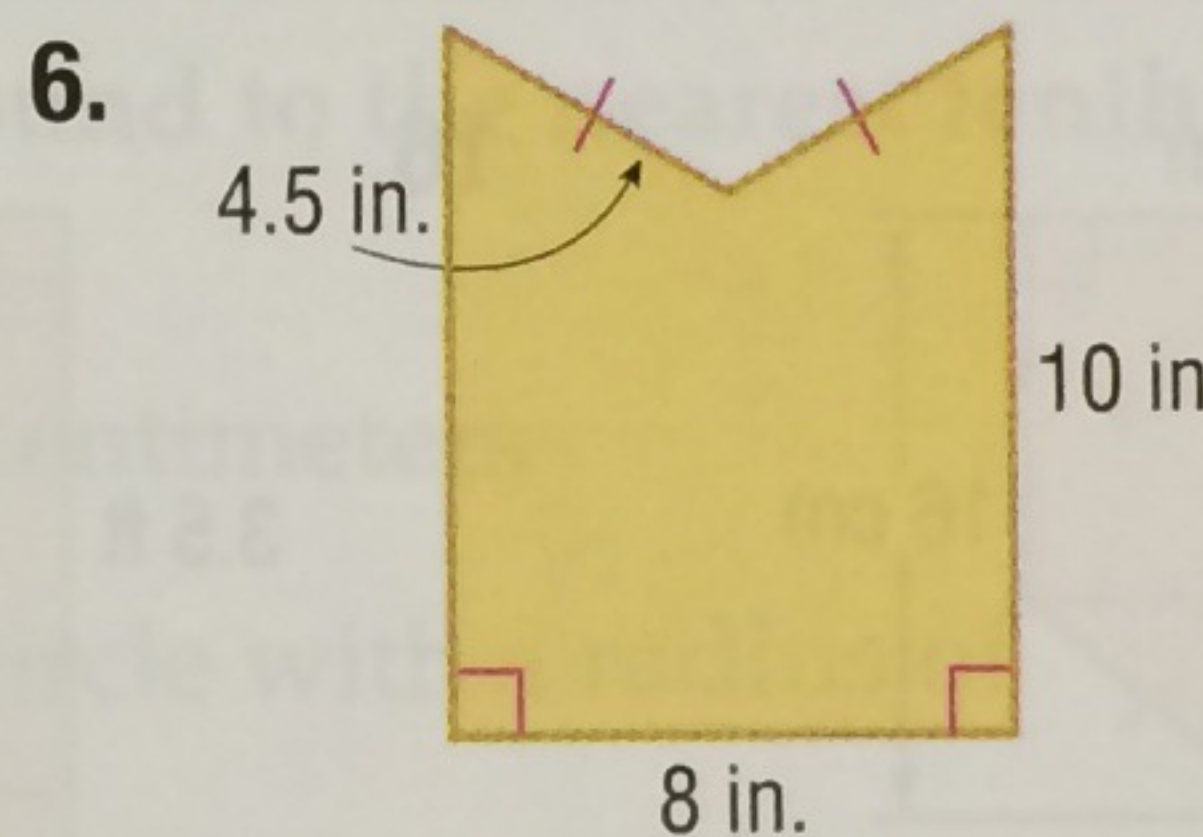
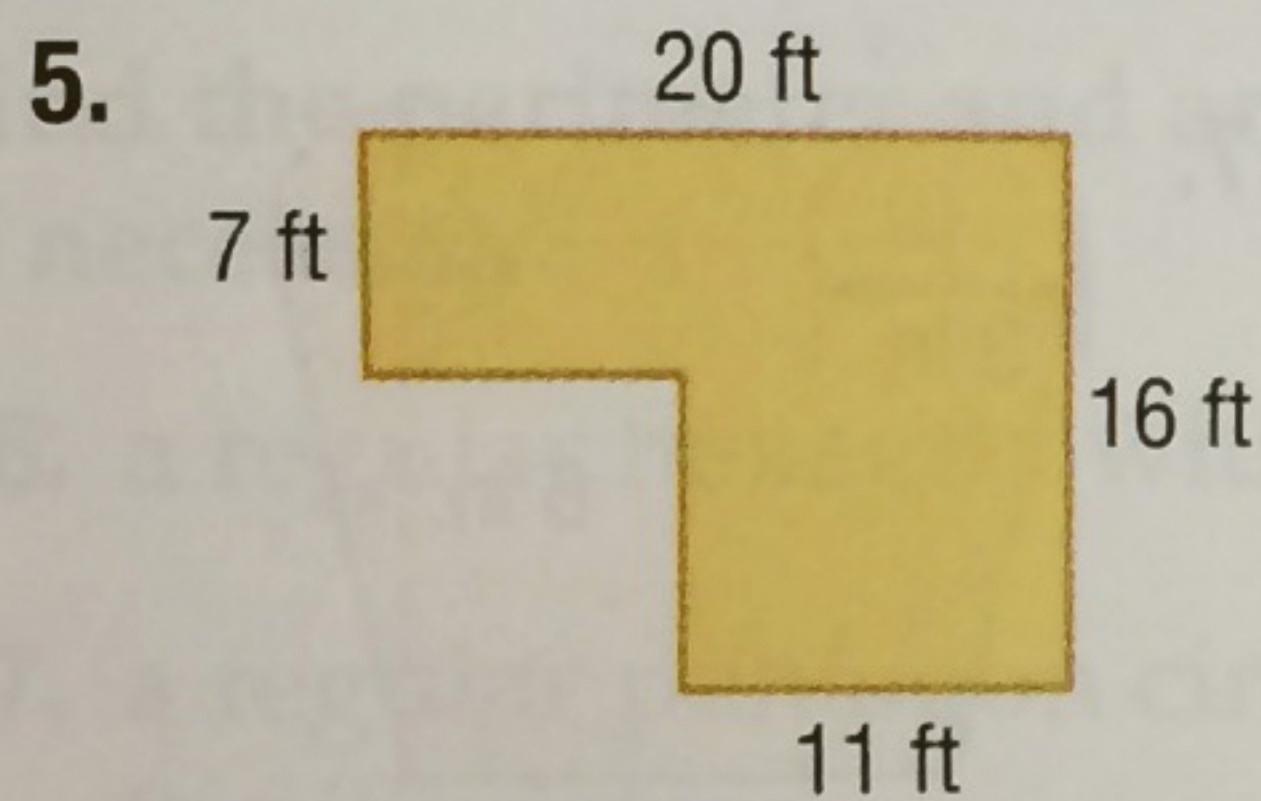
Examples 2–3 Find the area of each regular polygon. Round to the nearest tenth.



4. **POOLS** Kenton's job is to cover the community pool during fall and winter. Since the pool is in the shape of an octagon, he needs to find the area in order to have a custom cover made. If the pool has the dimensions shown at the right, what is the area of the pool?

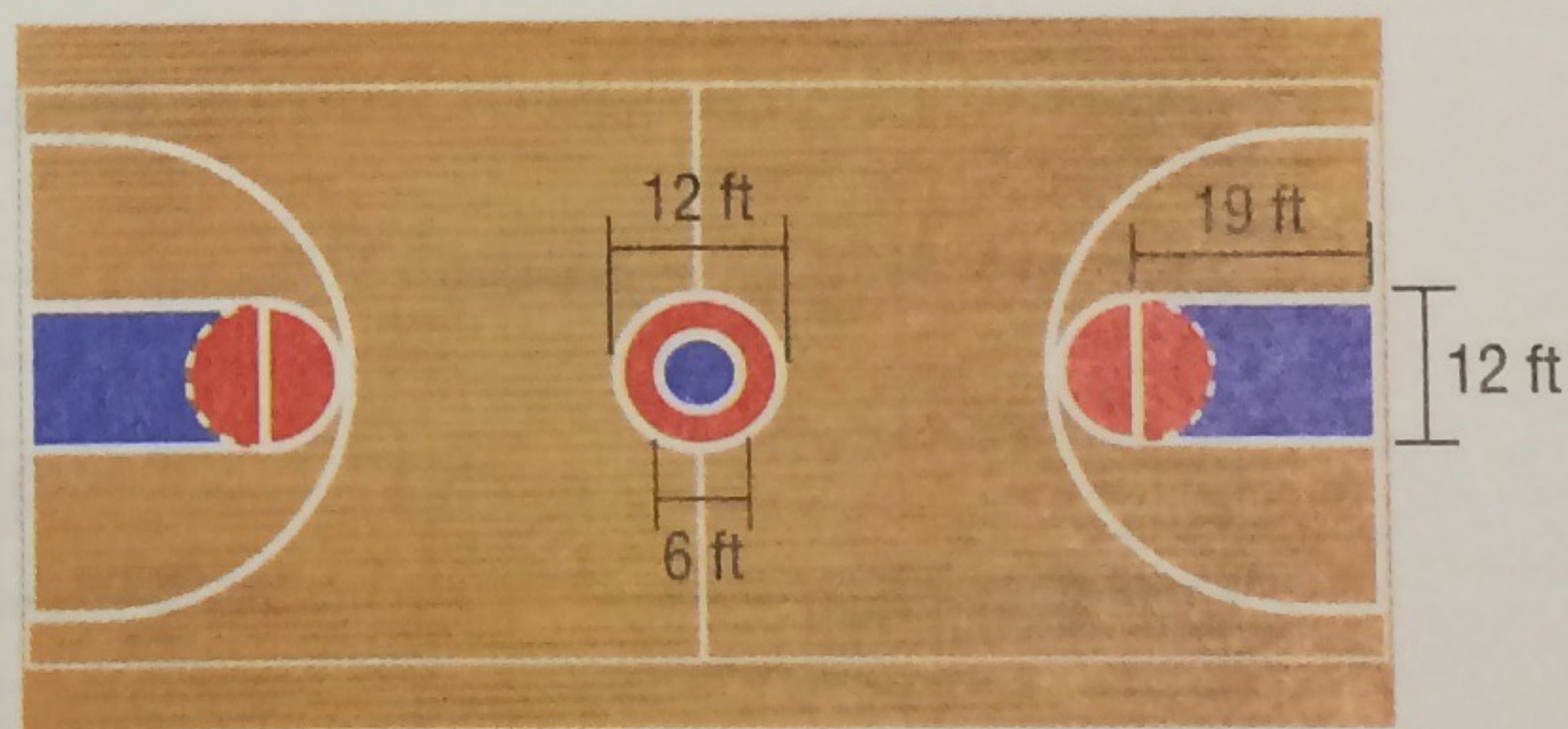


Examples 4–5 **CCSS SENSE-MAKING** Find the area of each figure. Round to the nearest tenth if necessary.



7. **BASKETBALL** The basketball court in Jeff's school is painted as shown.

- What area of the court is blue? Round to the nearest square foot.
- What area of the court is red? Round to the nearest square foot.



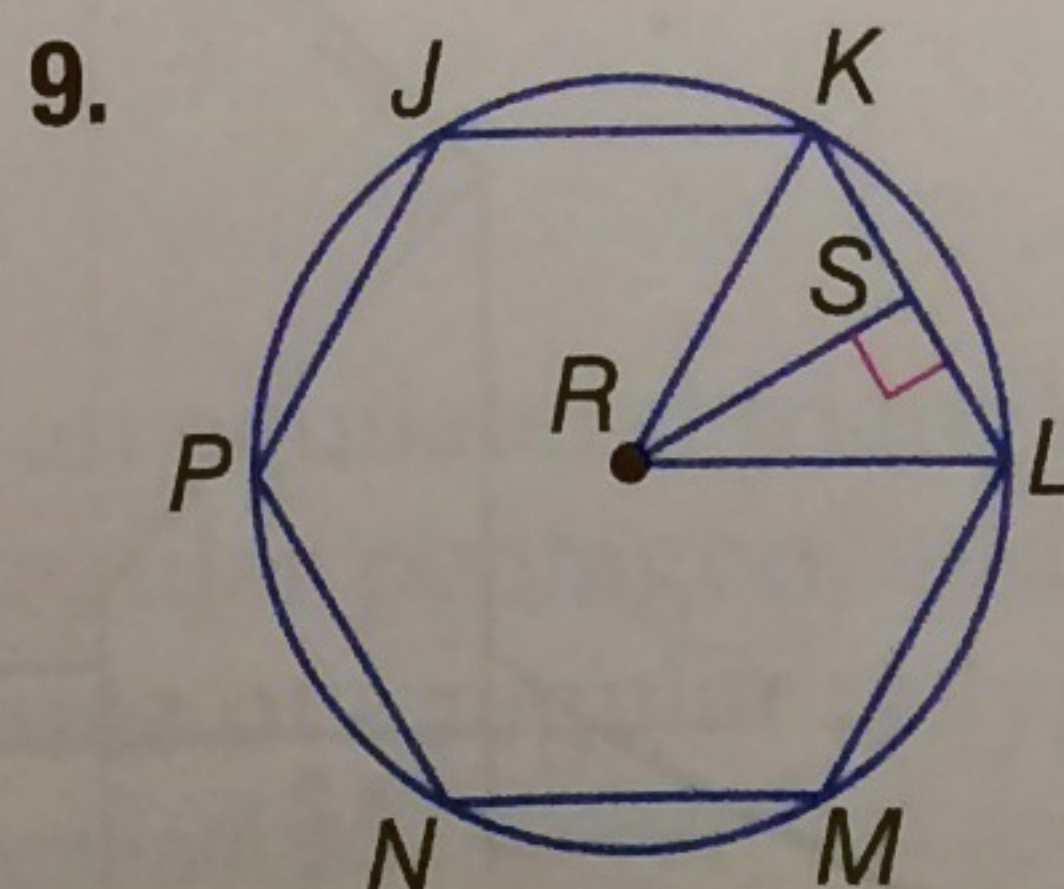
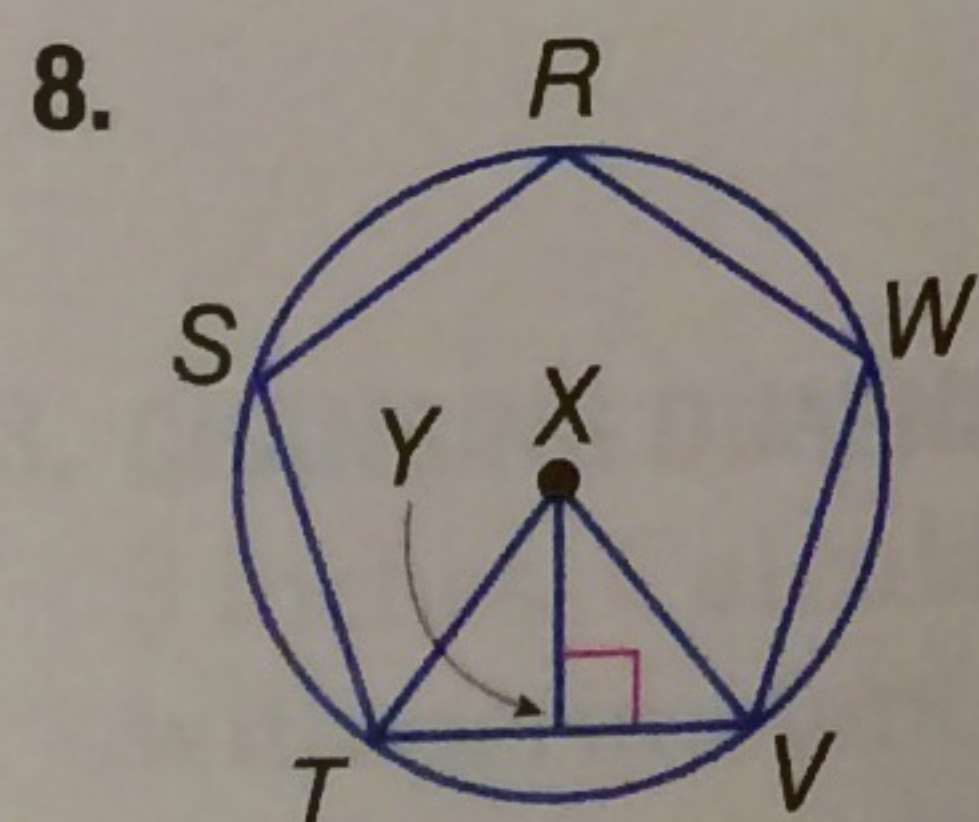
Note: Art not drawn to scale.

Practice and Problem Solving

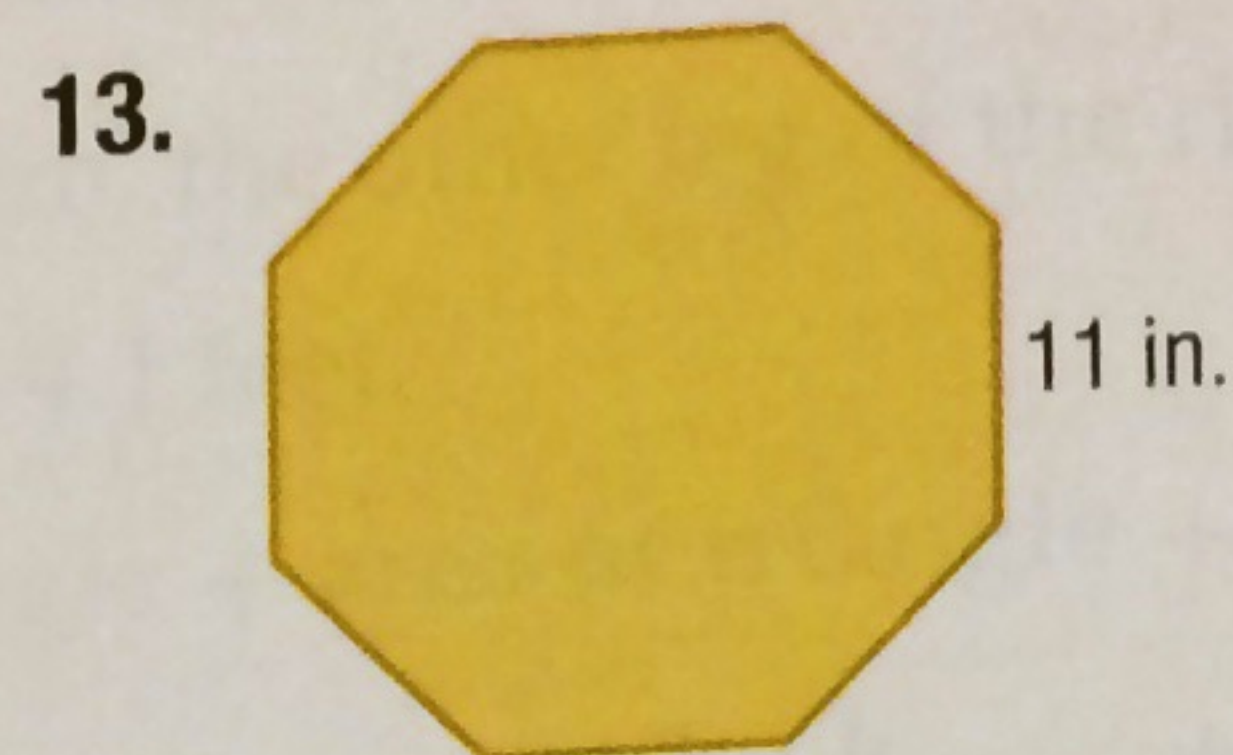
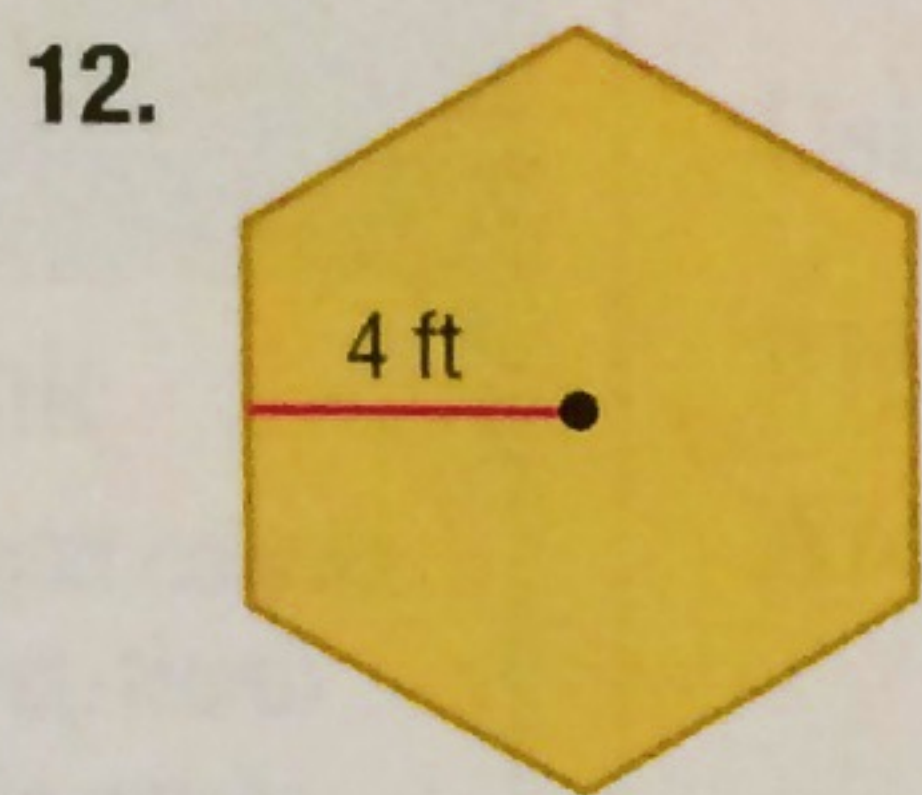
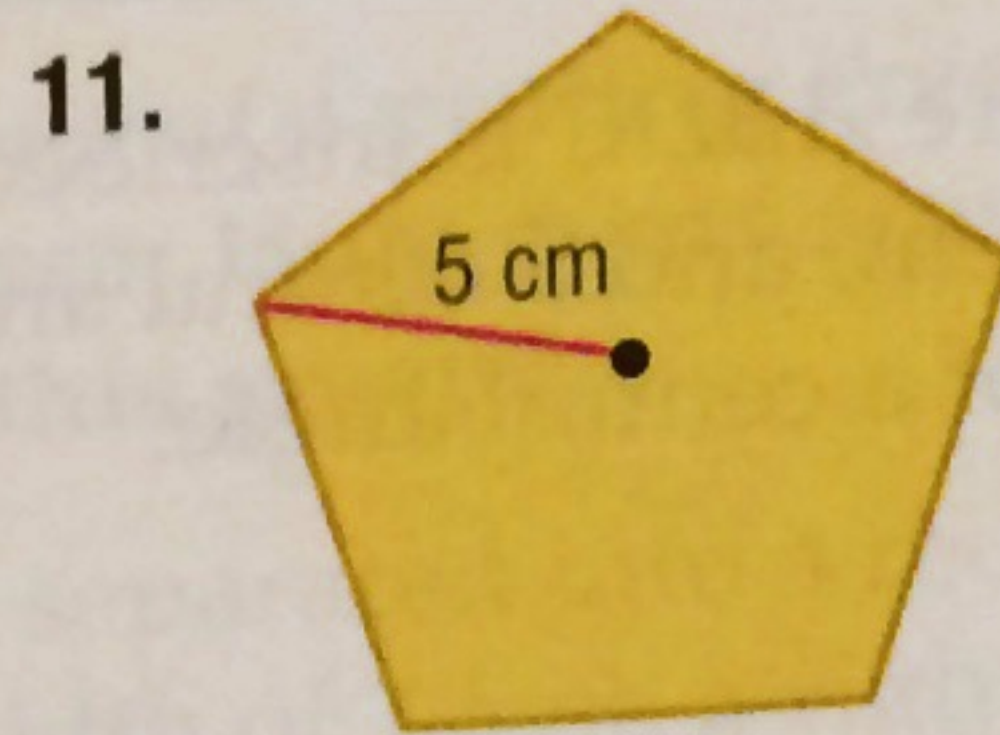
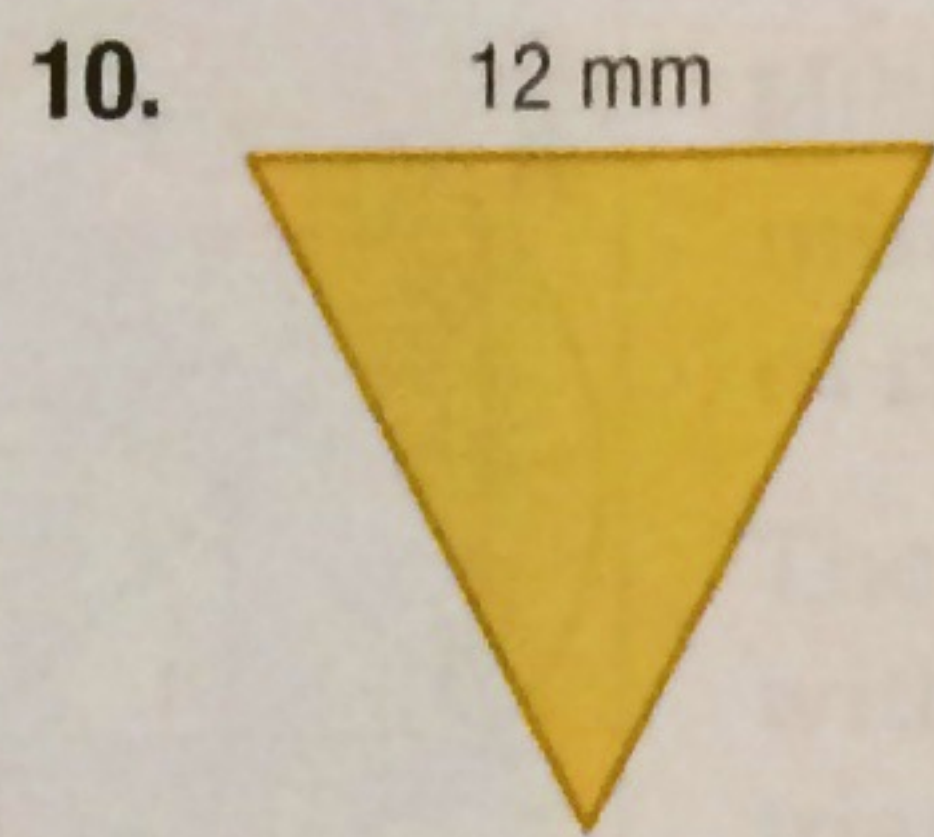
Extra Practice is on page R11.

Example 1

In each figure, a regular polygon is inscribed in a circle. Identify the center, a radius, an apothem, and a central angle of each polygon. Then find the measure of a central angle.



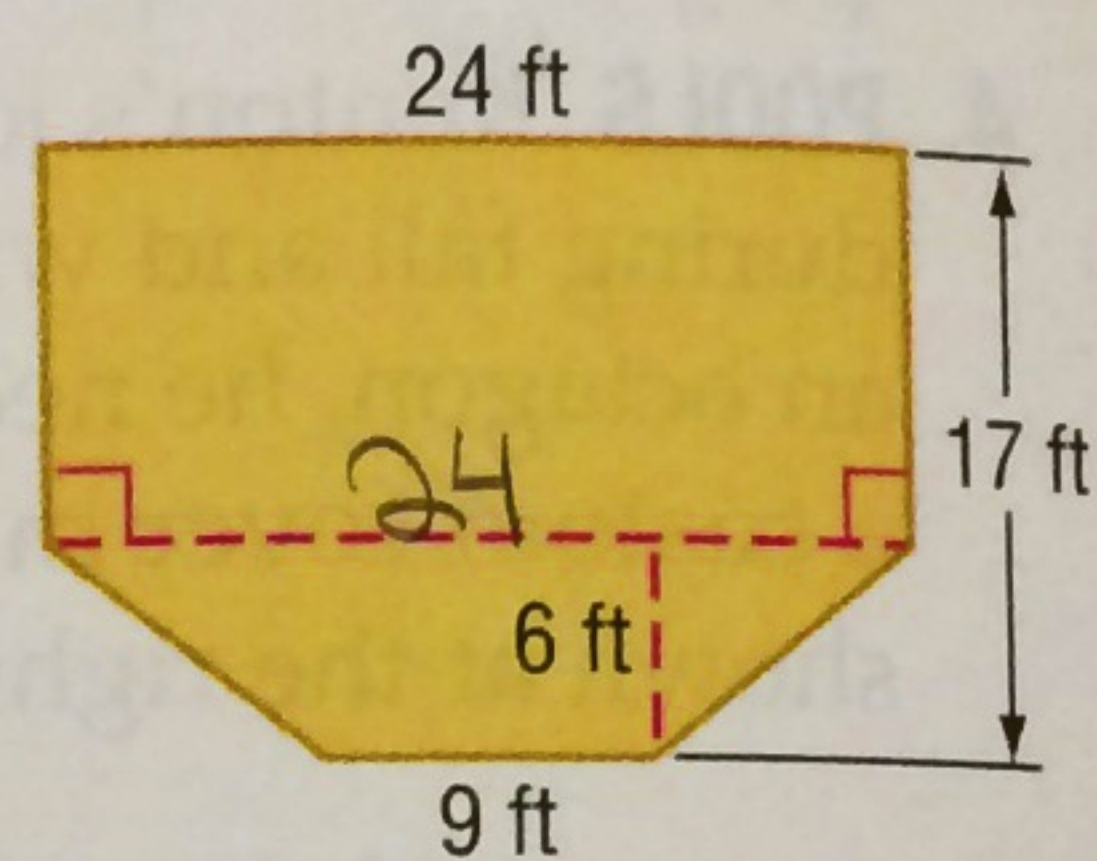
**Examples 2–3** Find the area of each regular polygon. Round to the nearest tenth.



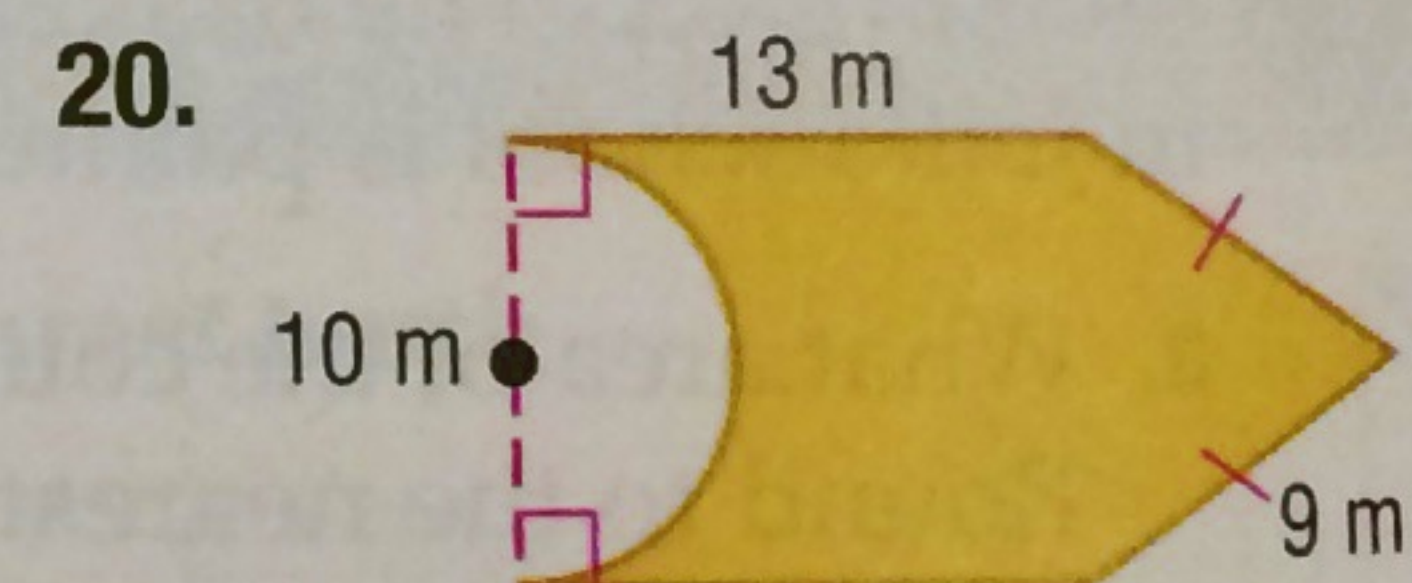
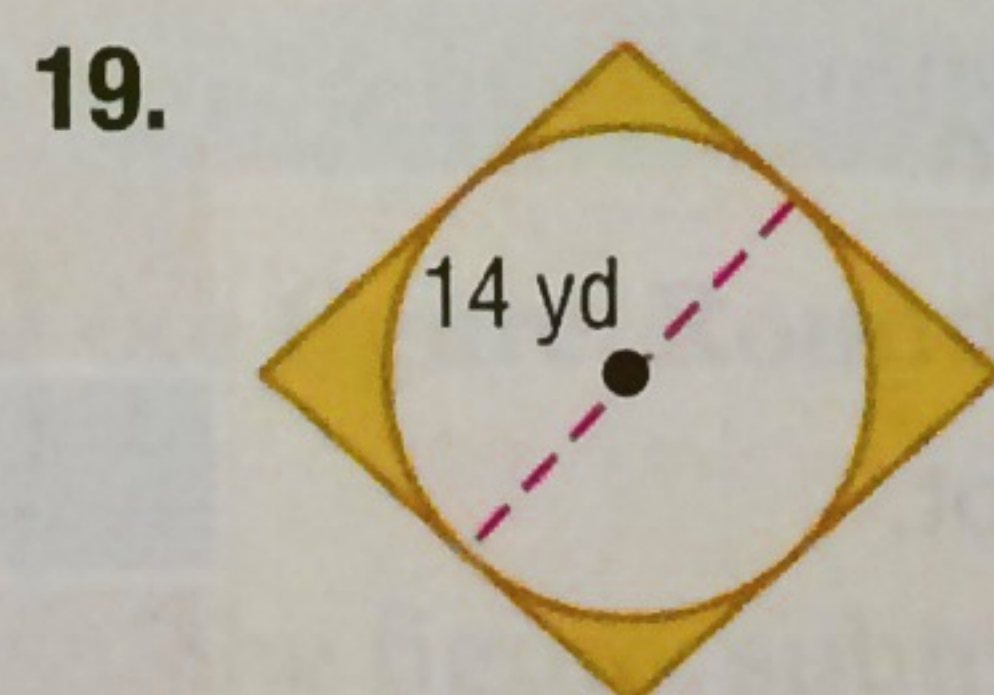
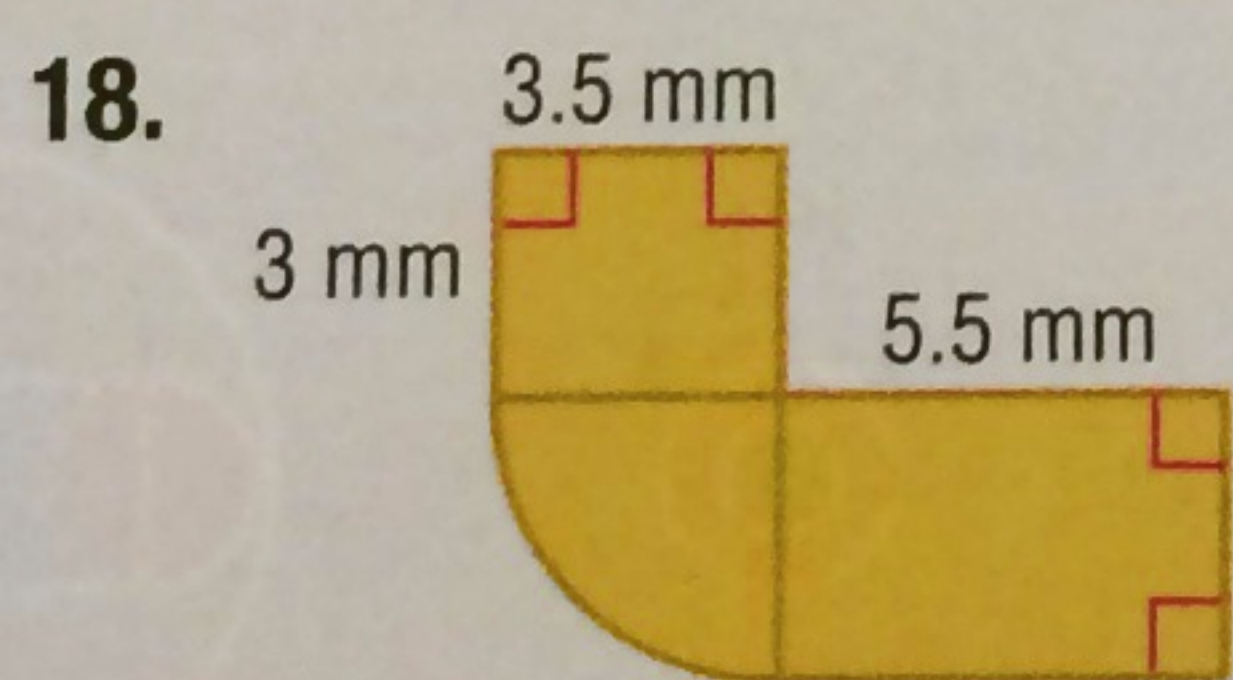
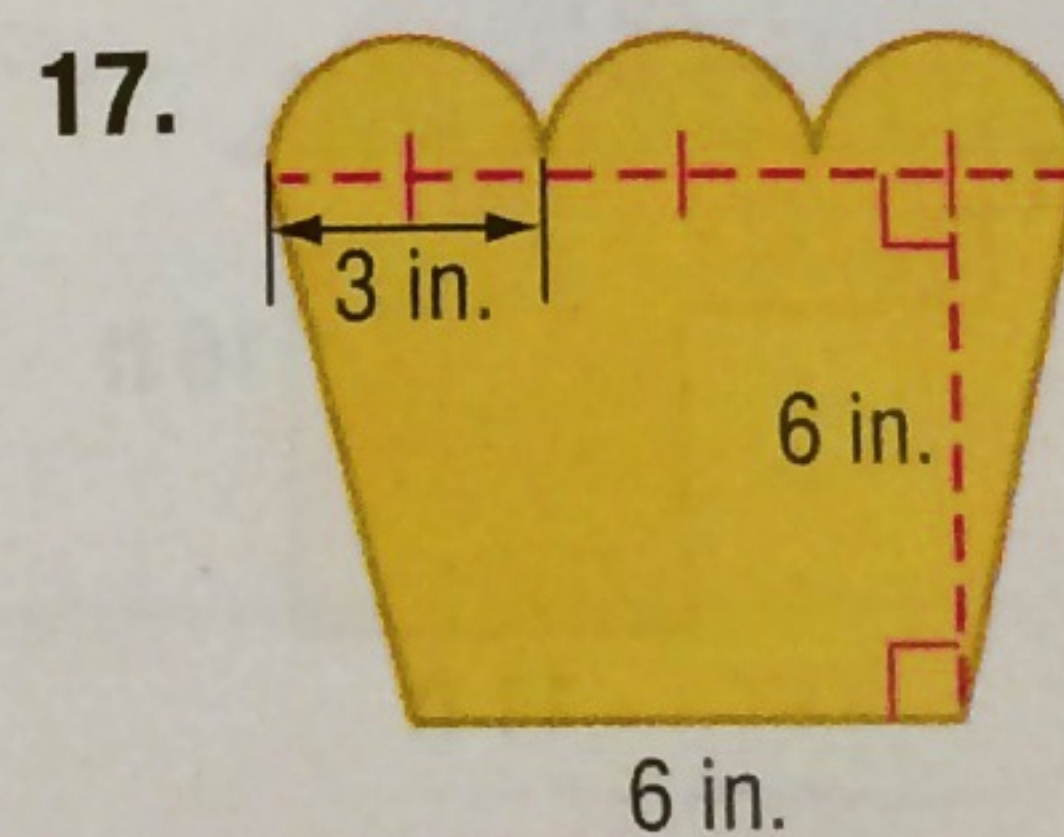
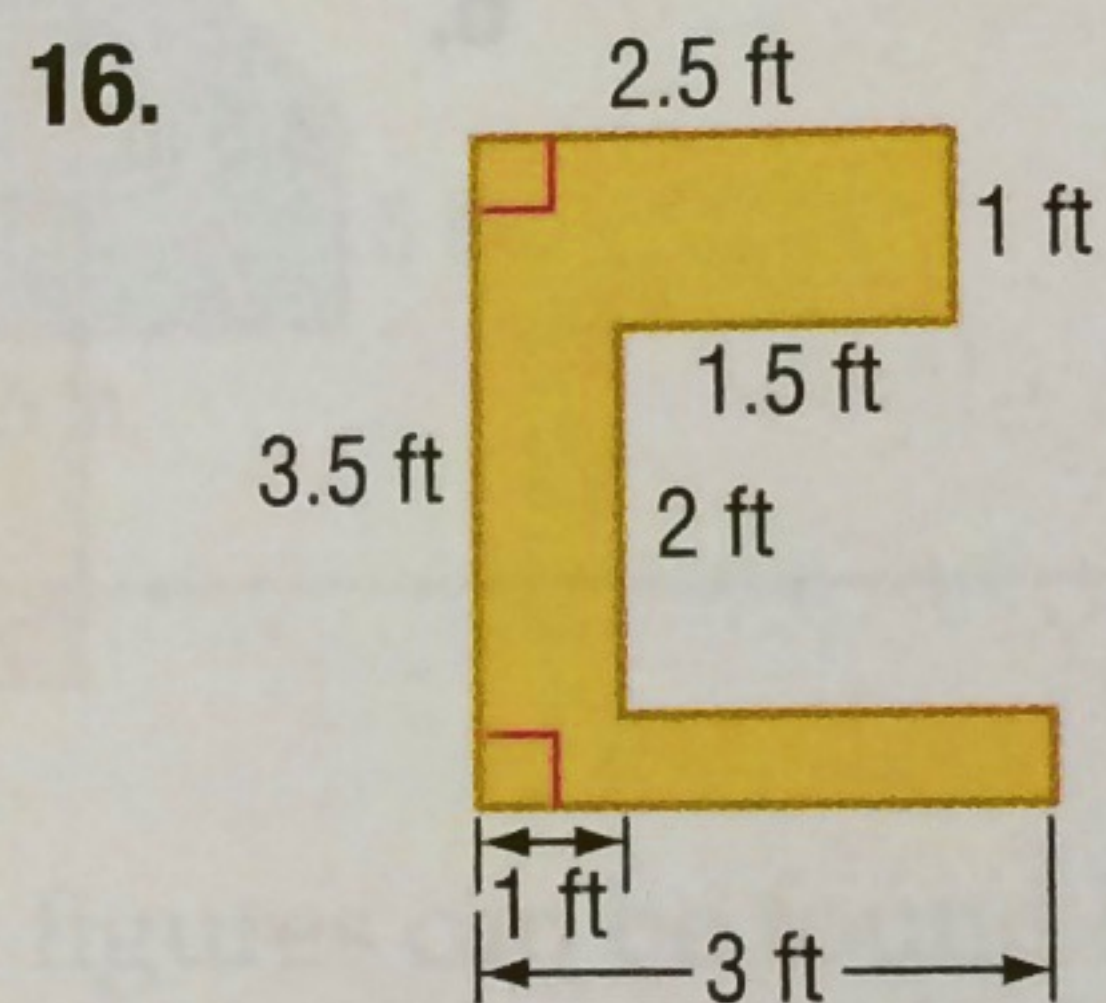
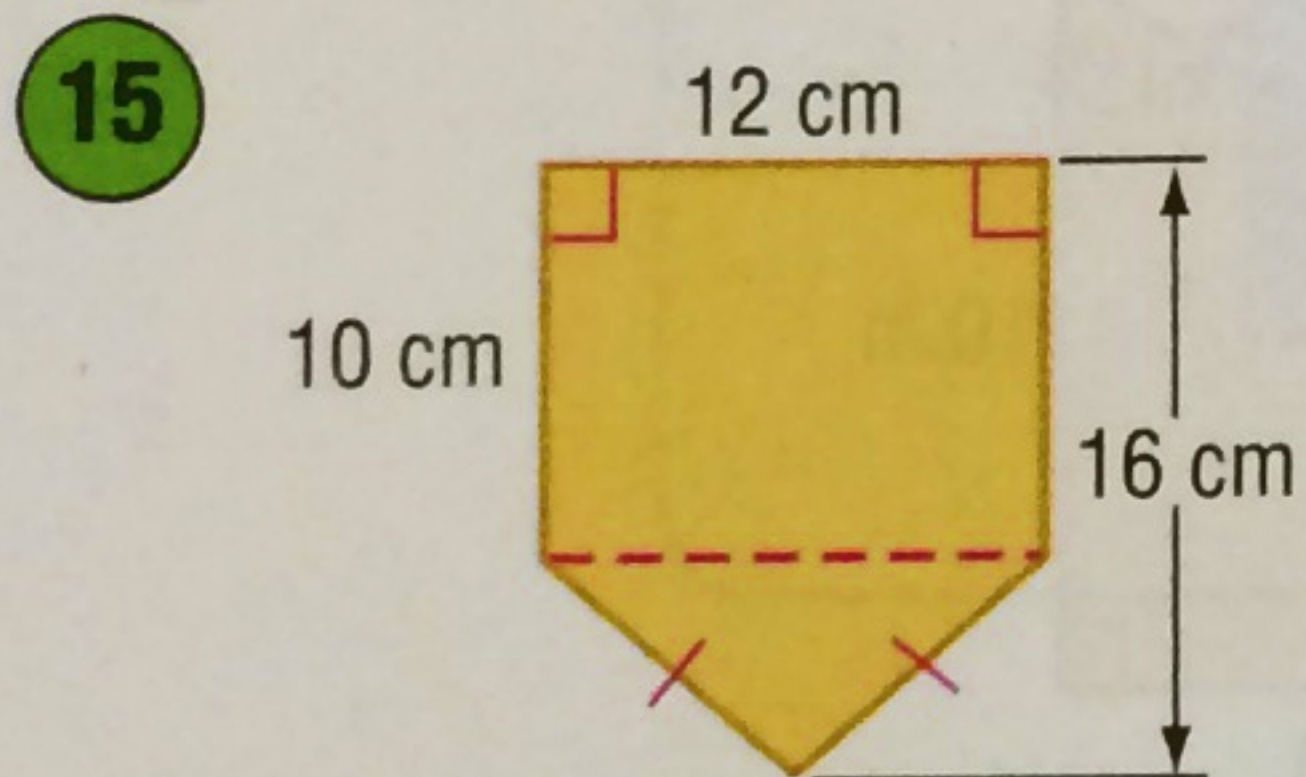
**Example 4**

14. **CARPETING** Ignacio's family is getting new carpet in their family room, and they want to determine how much the project will cost.

- Use the floor plan shown to find the area to be carpeted.
- If the carpet costs \$4.86 per square yard, how much will the project cost?



**Examples 4–5** **CCSS SENSE-MAKING** Find the area of each figure. Round to the nearest tenth if necessary.



21. **CRAFTS** Latoya's greeting card company is making envelopes for the card from the pattern shown.

- Find the perimeter and area of one envelope. Round to the nearest tenth.
- If Latoya orders sheets of paper that are 2 feet by 4 feet, how many cards can she make per sheet?

