# Lesson 12 Practice Problems

1. Match each diagram showing a sector with the measure of its central angle in radians.
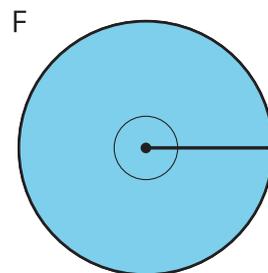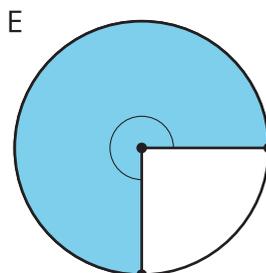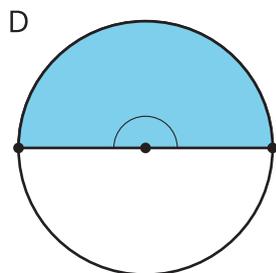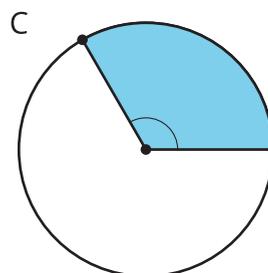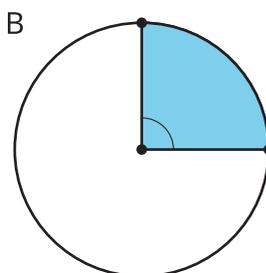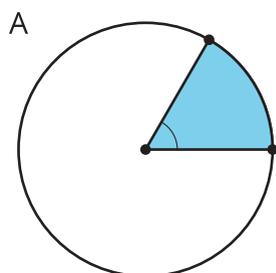


A. diagram A

B. diagram B

C. diagram C

D. diagram D

E. diagram E

F. diagram F

1. $\frac{3\pi}{2}$

2. $\pi$

3. $\frac{\pi}{3}$

4. $\frac{\pi}{2}$
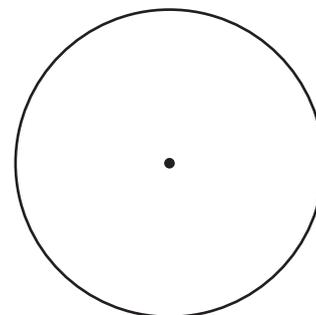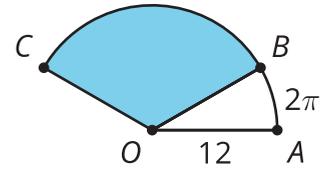
5. $2\pi$

6. $\frac{2\pi}{3}$

2. In the circle, sketch a central angle that measures $\frac{2\pi}{3}$ radians.

3. Angle $AOC$ has a measure of $\frac{5\pi}{6}$ radians. The length of arc $AB$ is $2\pi$ units and the radius is 12 units. What is the area of sector $BOC$?
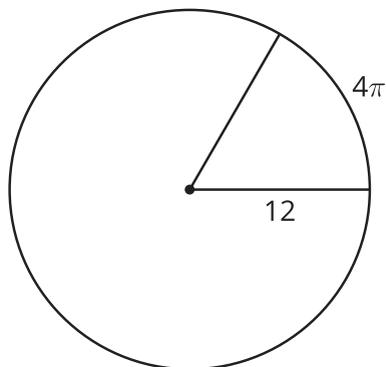
4. Calculate the radian measure of a 30 degree angle. Use any method you like, including sketching in the circle diagram provided. Explain or show your reasoning.

1 unit
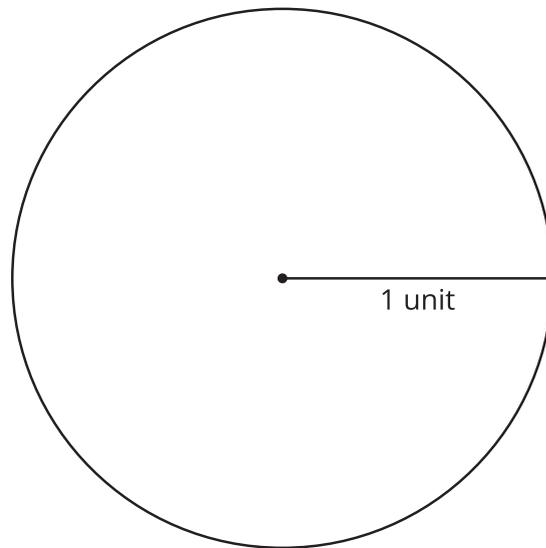
(From Unit 7, Lesson 11.)

5. Lin thinks that the central angle in circle A is congruent to the central angle in circle B. Do you agree with Lin? Show or explain your reasoning.
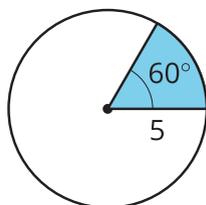
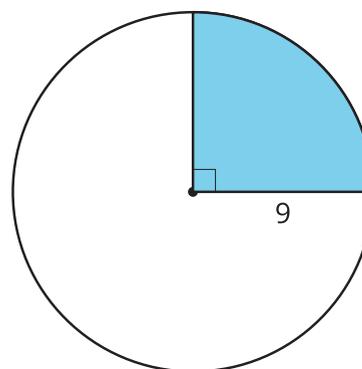**circle A**                                          **circle B**



(From Unit 7, Lesson 11.)

6. **circle A**                                       **circle B**



Select **all** true statements.

A. The sector in circle B has a larger area than the sector in circle A.

B. Not taking into account the sectors, circle A and circle B are similar.

C. The fraction of the circumference taken up by the arc outlining circle A's sector is smaller than the fraction of the circumference taken up by the arc in circle B.

D. The ratio of the area of circle A's sector to its total area is $\frac{1}{6}$.

E. The ratio of circle A's area to circle B's area is $\frac{5}{9}$.

(From Unit 7, Lesson 10.)

7. Match each arc length and radius with the measure of the central angle that defines the arc.

A. arc length $5\pi$ cm, radius 5 cm
1. angle: 30 degrees

B. arc length $4\pi$ cm, radius 10 cm
2. angle: 72 degrees

C. arc length $9\pi$ cm, radius 12 cm
3. angle: 135 degrees

D. arc length $3\pi$ cm, radius 18 cm
4. angle: 180 degrees

(From Unit 7, Lesson 9.)

8. Quadrilateral $ABCD$ is shown with the given angle measures. Select **all** true statements.
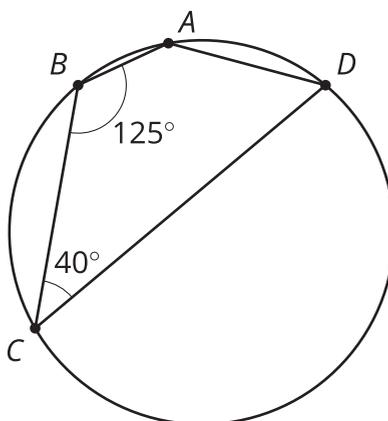


A. Angle $A$ measures 140 degrees.

B. The measures of angle $A$ and angle $D$ must add to 180 degrees.

C. Angle $A$ measures 55 degrees.

D. Angle $D$ measures 55 degrees.

E. Angle $D$ measures 40 degrees.

(From Unit 7, Lesson 4.)