PreCalculus

1. The following angles are given to you in radian measure. Without converting to degrees, draw a sketch of each angle in standard position AND give the reference angle.

a) $\frac{8\pi}{5}$ b) $\frac{\pi}{6}$ c) $\frac{13\pi}{9}$

d) $\frac{3\pi}{2}$ e) 5.6 f) 1.3

2. If you are given a degree measurement, how do you convert it to radians?

3. If you are given a radian measurement, how do you convert it to degrees?

4. Convert the following angle measurements from degrees to radians (or vice-versa).

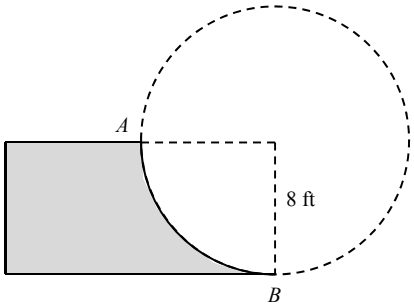
a) $\frac{2\pi}{3}$ b) $24°$

c) 4.6 d) $310°$

5. What is the formula for finding arc length? What does each letter represent?

6. A sector has an arc length 12 cm and a central angle of $\frac{\pi}{3}$ radians. Find the radius of the circle.

7. The skateboard ramp at the right is called a quarter pipe. The curved surface is determined by the radius of a circle. Find the length of the curved part of the ramp.

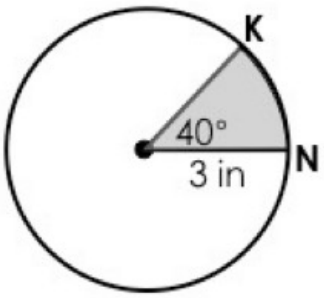


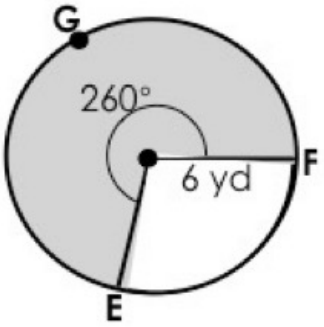
8. The paddlewheel of a riverboat has a diameter of 24 feet. Find the arc length of the circle made when the paddlewheel rotates 300°.

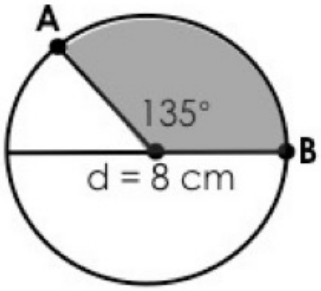
9. How many degrees are in one revolution? How many degrees in $\frac{1}{8}$ of a revolution?

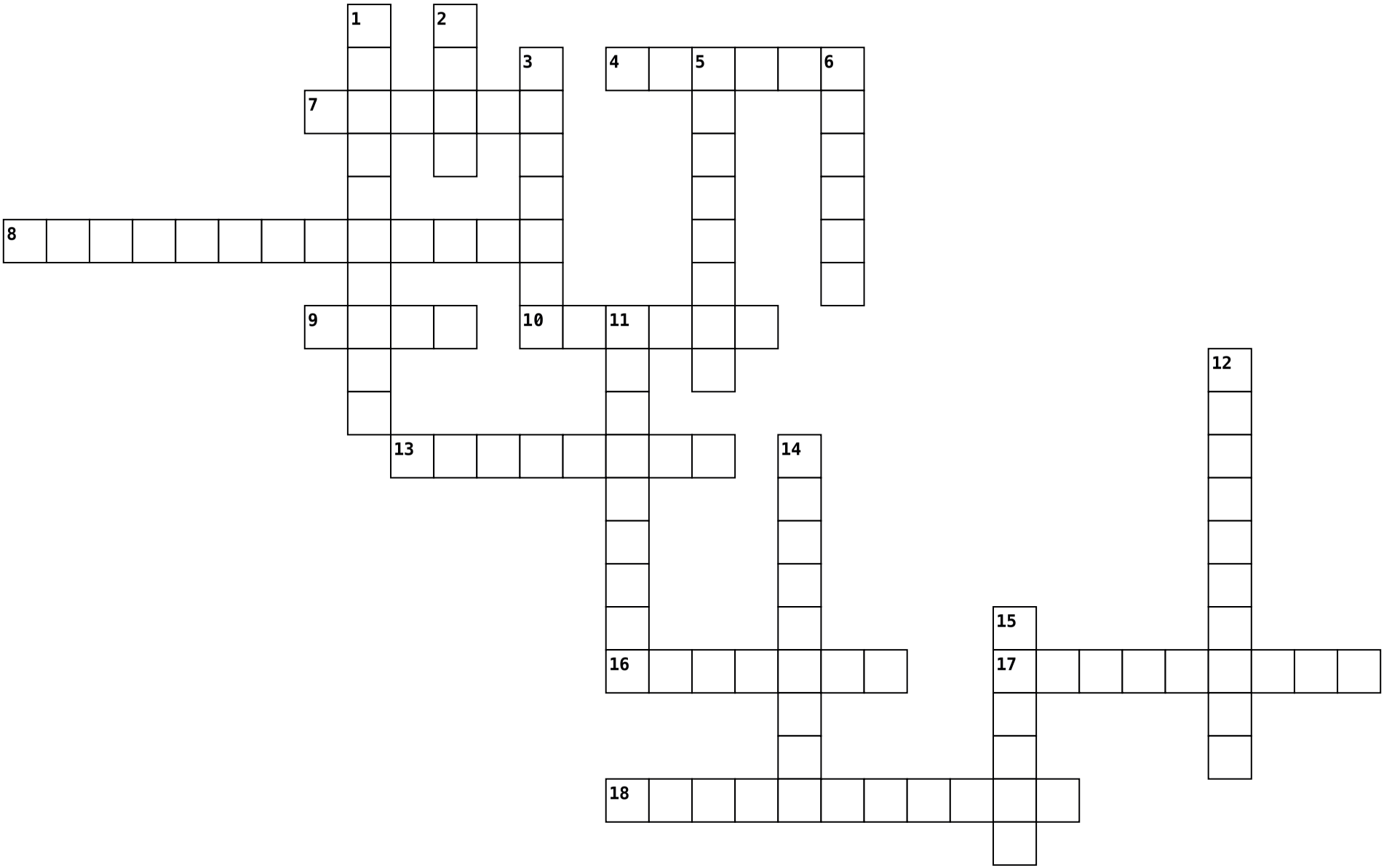
10. How many radians are in one revolution? How many radians in $\frac{3}{4}$ of a revolution?

11. The radius of a car wheel is 13 inches. How many revolutions per minute is the wheel making when the car is traveling at 40 mph.





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Across

4. Pizza-shaped slice of a circle

7. X-coordinate on the unit circle (adjacent/hypotenuse)

8. Distance all the way around a circle

9. Y-coordinate on the unit circle (opposite/hypotenuse)

10. Reciprocal of cosine

13. One of four regions of the coordinate plane

16. Ratio of opposite to adjacent

17. Distance along part of a circle's edge

18. Same shape under reflection or rotation

Down

1. Equation showing two ratios are equal

2. Circle with radius one, centered at the origin

3. There are 360 of these in one full revolution

5. Reciprocal of sine

6. Distance from circle's center to edge

11. Reciprocal of tangent

12. Angles that share the same end point

14. An angle in Q1 that creates the same trig triangle

15. Angle measure that includes some multiple of pi