BECA / Dr. Huson / Geometry 08-Area+volume Name:
pset ID: 143

8-7bPreExam-Area+volume

1. Use the formulas for the area and circumference of circles:

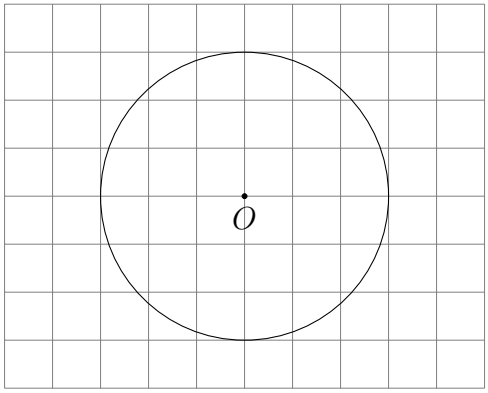
$$A = \pi r^2$$

$$C = \pi D = 2\pi r$$

2. Given the circle centered at O with radius $r = 3$. Leave an exact answer, in terms of π if necessary.

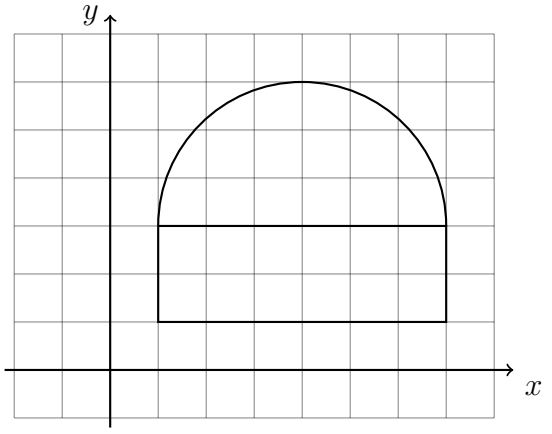
   (a) Find the circumference of circle O.

   (b) Find the area of the circle.



3. Find the radius of a circle having an area of 25π.

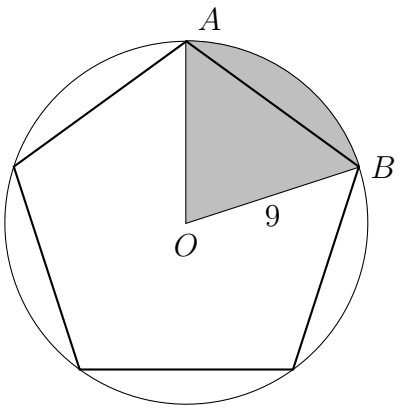
4. Find the area of the shape shown below composed of a rectangle and circular cap. Leave your answer as an exact value in terms of π.



5. A pentagon is inscribed in circle O, as shown below. The circle has radius $r = 9$.

   (a) Find the area of the sector AOB.

   (b) Find the perimeter of the sector AOB.

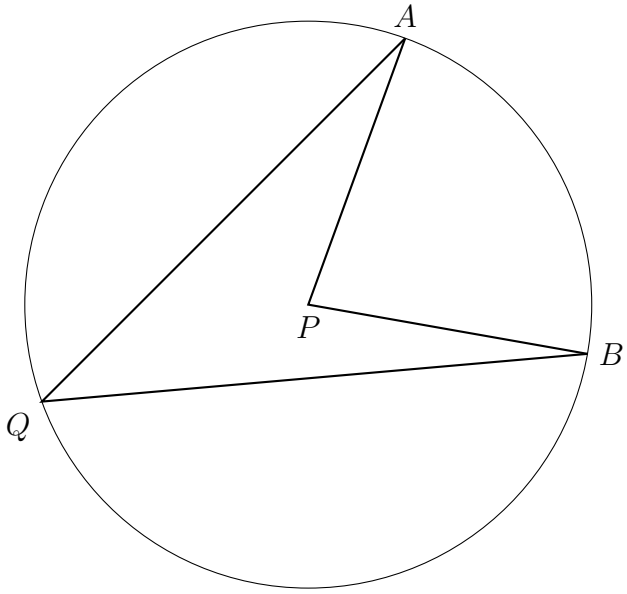


6. Given the circle with center P with central angle $\angle APB$ and inscribed angle $\angle AQB$. Using a protractor, measure each angle.

   (a) $m\angle APB =$

   (b) $m\angle AQB =$

   (c) What do you think is the ratio of the central angle to the inscribed angle?



7. Given $R(-3, 1)$ and $S(5, 7)$, find the length of $\overline{RS}$. Note: $l = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.

BECA / Dr. Huson / Geometry 08-Area+volume Name:
pset ID: 143

8. Perform each calculation, writing down the full calculator display and then rounding to the *nearest hundredth*.

   (a) $V = \frac{1}{3}\pi(2.4)^2(5.1)$ (b) $P = 3.6 + \frac{1}{2}\pi(3.6)$

9. Solve each equation for the appropriate variable. Do not round. Simplify radicals.

   (a) $A = \pi r^2 = 27\pi$ (b) $V = \frac{1}{3}(6.0)^2 h = 153$

Model the situation with an equation. Use the formula sheet. You must start with a labeling variable. Do NOT solve!

10. A large concrete post in the shape of a cylinder has a volume of 250 cubic feet. Its height is 12 feet. Find the radius of the base of the post.

11. A spherical cork fishing net float has a volume of 4000 cubic centimeters. Find its radius.

12. The volume of a cone having a **diameter** of 10 inches is 200 cubic inches. Find the cone's height.

Applying density ratios

13. A tank of gasoline holds 15 gallons. Find the cost to completely fill the tank if gasoline costs \$3.15 per gallon.

14. A stick of butter has a volume of 90 cubic centimeters. If the density of butter is 0.9 grams per cubic centimeter, find the weight of a stick of butter.

15. A large glass marble has a diameter of 3 cm. The density of glass is 2.70 g/cm^3. Find the weight of the marble.

16. A bar of solid gold is in the shape of a rectangular prism having a length of 12 cm, width of 2 cm, and thickness of 2 cm. The density of gold is 19.3 grams per cubic cm, and its approximate market value is \$50 per gram.

    (a) Find the weight of the bar of gold.

    (b) Find its value in dollars.

BECA / Dr. Huson / Geometry 08-Area+volume Name:
pset ID: 143

17. Perform each calculation, writing down the full calculator display and then rounding to the *nearest hundredth*.

(a) $A = 15.944732$

(b) $W = 3.4 \times 9.8 \times 4.3 \times 0.15$

(c) $V = \frac{1}{3}\pi(3.4)^2(6.1)$

(d) $P = 8.6 + \frac{1}{2}\pi(8.6)$

(e) $V = 199.19711$

(f) $W = \frac{1}{3}(13)3.3^2 \times 1.175$

(g) $V = \frac{1}{3}\pi(12.4)^2(8.1)$

(h) $P = 12 + \frac{1}{4}\pi(12)$