BECA / Dr. Huson / Geometry 08-Area+volume Name:
pset ID: 135

8-4cDN-Estimation

1. In your notebook, write the formulas for the area and circumference of circles:

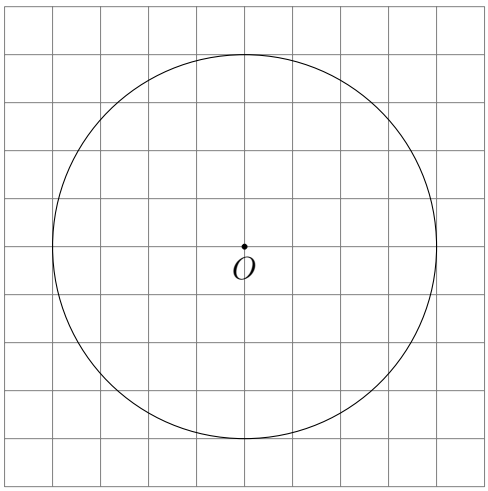
$$A = \pi r^2$$

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

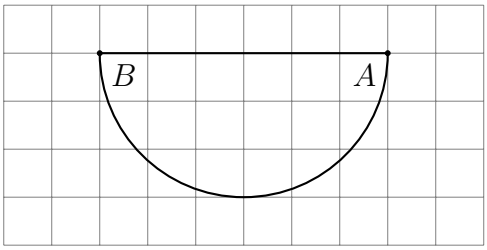
2. Given the circle centered at O with radius $r = 4$.

   (a) Find the circumference of a circle.

   (b) Find the area of the circle.



3. Given the semi-circle shown with diameter $AB = 6$. Find its area and perimeter.

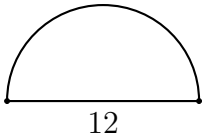


4. Find the radius of a circle having an area of 81π.

5. Find the diameter of a circle with a circumference of 22.

Classwork: Estimating and measuring angles, length, and area

6. Find the area of a semi-circle with diameter of 12 centimeters.



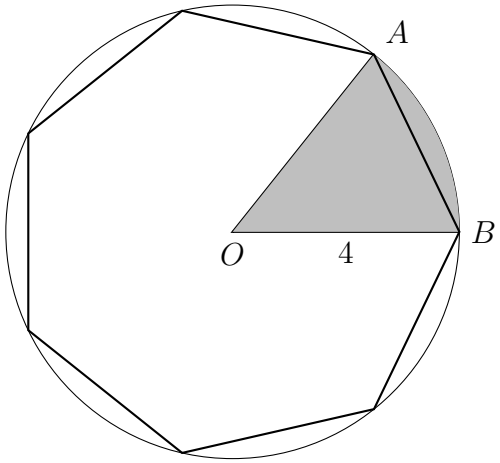
7. Given circle O with radius $OB = 4$ cm.

   (a) Find the circumference of circle O.

   (b) Find the area of the circle.

   (c) A regular heptagon (7 sides) is inscribed in the circle, with A and B two of its vertices.

   Find the area of the sector AOB.



8. Find the volume of a pyramid ($V = \frac{1}{3}Bh$) having a height of 21 inches and with a square base having side lengths of 11 inches. Express your result to the *nearest cubic inch*.

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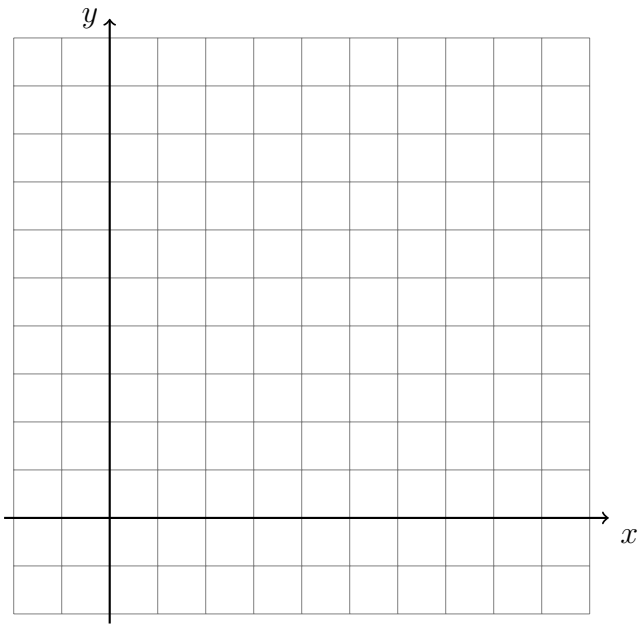
9. Find the volume of a hemisphere with a radius of 15 inches, to the *nearest whole cubic inch*. (The formula for the volume of a *sphere* is $V = \frac{4}{3}\pi r^3$)

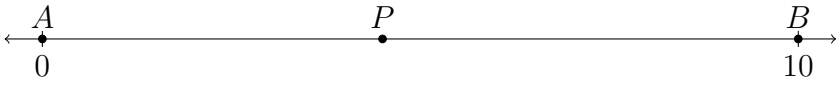
10. Given $R(1, -5)$ and $S(5, 7)$, find the length of $\overline{RS}$. Note: $l = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$.

11. On the graph, draw polygon ABCDEF with vertices A(2, 1), B(2, 4), C(4, 4), D(4, 8), E(8, 8), and F(8, 1). Find the perimeter and the area of the polygon.



Estimating and measuring

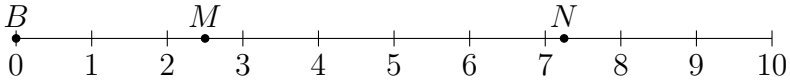
12. The point P falls $A(0)$ and $B(10)$ on the numberline $\overleftrightarrow{AB}$ as shown below.



(a) Estimate the value of P without using any tools.

(b) Find the position of P as accurately as you can with a ruler.

13. The distance from B on the line is scaled so that each centimeter represents one foot.



(a) Estimate the distance of M from B in feet and inches (by eye).

(b) Using a ruler, find the distance between M and N in feet and inches.

14. Given the circle O with diameter $D = 6$.

(a) Estimate the area by counting the squares in the grid.

(b) Calculate the area.

(c) Quantify the error in your estimate as a percentage.