

Name

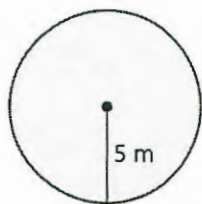
Answers

Date

Geometry – Area of Circles

Find the area for the following. Use 3.14 or $\frac{22}{7}$ for π .

1)



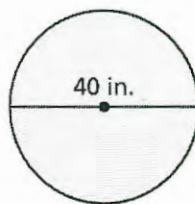
$$A = \pi r^2$$

$$= 3.14 \times 5^2$$

$$= 3.14 \times 25$$

$$= 78.5 \text{ m}^2$$

2)



$$r = 20 \text{ in}$$

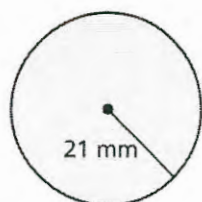
$$A = \pi r^2$$

$$= 3.14 \times 20^2$$

$$= 3.14 \times 400$$

$$= 1,256 \text{ in}^2$$

3)



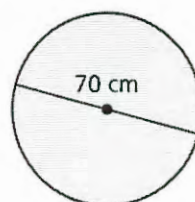
$$A = \pi r^2$$

$$= 3.14 \times 21^2$$

$$= 3.14 \times 441$$

$$= 1,384.74 \text{ mm}^2$$

4)



$$r = 35 \text{ cm}$$

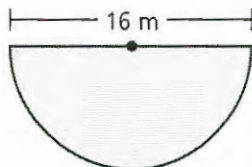
$$A = \pi r^2$$

$$= 3.14 \times 35^2$$

$$= 3.14 \times 1,225$$

$$= 3,846.5 \text{ cm}^2$$

5)



$$r = 8 \text{ m}$$

$$A = \frac{1}{2} \pi r^2$$

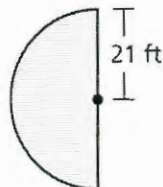
$$= \frac{1}{2} \times 3.14 \times 8^2$$

$$= \frac{1}{2} \times 3.14 \times 64$$

$$= \frac{1}{2} \times 200.96$$

$$= 100.48 \text{ m}^2$$

6)



$$A = \frac{1}{2} \pi r^2$$

$$= \frac{1}{2} \times 3.14 \times 21^2$$

$$= \frac{1}{2} \times 3.14 \times 441$$

$$= \frac{1}{2} \times 1,384.74$$

$$= 692.37 \text{ ft}^2$$

Complete the following. Show all algebraic work.

7) What is the radius of a circle whose area is 254.34 cm^2 ?

$$A = \pi r^2$$

$$\frac{254.34}{3.14} = \frac{3.14 \times r^2}{3.14}$$

$$81 = r^2$$

$$9 \text{ cm} = r$$

8) What is the area of a circular region with a diameter of 18 kilometers?

$$r = 9 \text{ km}$$

$$A = \pi r^2$$

$$= 3.14 \times 9^2$$

$$= 3.14 \times 81$$

$$= 254.34 \text{ km}^2$$

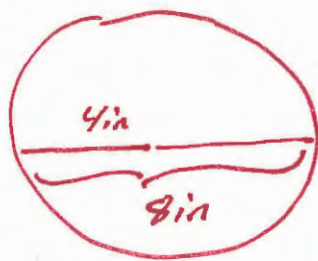
- 9) The area of Jason's cake plate is about 50.24 in^2 . He places a 7-inch fork across the plate after eating. Can the fork fit on the plate without going over the edge? Show all work.

$$A = \pi r^2$$

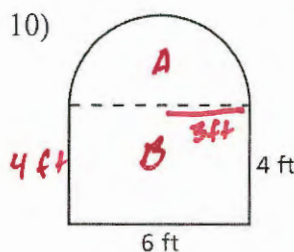
$$\frac{50.24}{3.14} = \frac{3.14 \times r^2}{3.14}$$

$$16 = r^2$$

$$4 = r$$



Complete perimeter and area of the following regions.



Area

$$A_A = \frac{1}{2} \pi r^2$$

$$= \frac{1}{2} \times 3.14 \times 3^2$$

$$= \frac{1}{2} \times 3.14 \times 9$$

$$= \frac{1}{2} \times 28.26$$

$$= 14.13$$

$$A_B = bh$$

$$= 6 \times 4$$

$$= 24$$

$$\text{Total} = 14.13 + 24$$

$$= 38.13 \text{ ft}^2$$

Perimeter

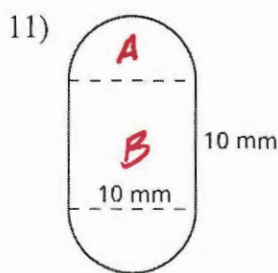
$$P = \frac{1}{2} \pi d + 4 + 4 + 6$$

$$= \frac{1}{2} \times 3.14 \times 6 + 4 + 4 + 6$$

$$= \frac{1}{2} (18.84) + 4 + 4 + 6$$

$$= 9.42 + 4 + 4 + 6$$

$$= 23.42 \text{ ft}$$



Perimeter

$$P = \pi d + 10 + 10$$

$$= 3.14 \times 10 + 10 + 10$$

$$= 31.4 + 10 + 10$$

$$= 51.4 \text{ mm}$$

Area

$$A_A = \pi r^2$$

$$= 3.14 \times 5^2$$

$$= 3.14 \times 25$$

$$= 78.5$$

$$A_B = bh$$

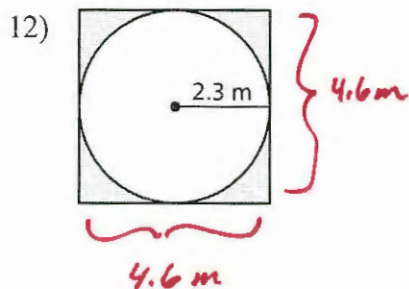
$$= 10 \times 10$$

$$= 100$$

$$\text{Total} = 78.5 + 100$$

$$= 178.5 \text{ mm}^2$$

Find the area of the shaded region..



Area square

$$= bh$$

$$= 4.6 \times 4.6$$

$$= 21.16$$

Area circle

$$= \pi r^2$$

$$= 3.14 \times 2.3^2$$

$$= 3.14 \times 5.29$$

$$= 16.6106$$

Shaded Area

$$= 21.16 - 16.6106$$

$$= 4.5494 \text{ m}^2$$