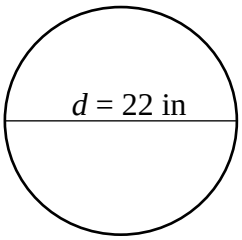
Area of Circles

1. Determine the area of a circle with a diameter of 22 inches.



Step 1: Determine the radius of the circle.

$$r = \frac{d}{2}$$

$$r = \frac{22\ in}{2}$$

$$r = 11\ in$$

Step 2: Determine the area of the circle.

$$A_{circle} = \pi r^2$$

$$= \pi \times (11\ in)^2$$

$$= 380.1\ in^2$$

The area of the circle is approximately 380.1 in^2.
If 3.14 is used for π, the area of the circle is approximately 379.9 in^2.

2. A circle has an area of 735.4 in^2. What is the radius of the circle?

$$A_{circle} = \pi r^2$$
$$735.4\ in^2 = \pi \times r^2$$
$$\frac{735.4\ in^2}{\pi} = \frac{\cancel{\pi} \times r^2}{\cancel{\pi}}$$
$$234.085....in^2 = r^2$$
$$\sqrt{234.085....in^2} = \sqrt{r^2}$$
$$15.3\ in = r$$

The radius of the circle is approximately 15. 3 inches.