

7. ~~C = \pi d~~ $d = 12\text{ m}$ $r = 6\text{ m}$

$$\begin{aligned}\text{current area} &= \pi r^2 \\ &= \pi (6)^2 \\ &= \pi (36) \\ &= 113.04\text{ m}^2\end{aligned}$$

if area is tripled

$$\begin{aligned}A &= 3 \times 113.04 \\ &= 339.12\text{ m}^2\end{aligned}$$

find new radius

$$A = \pi r^2$$

$$339.12 = \pi r^2$$

divide by π

$$\frac{339.12}{\pi} = \frac{\pi r^2}{\pi}$$

$$108 = r^2$$

square root

$$\sqrt{108} = \sqrt{r^2}$$

$$10.4\text{ m} = r$$

radius went from 6 to 10.4
which is increase of 4.4m
diameter went from 12 to 20.8
which is increase of 8.8m (or double 4.4)