

- 3) The radius of a circle is increasing at a constant rate of 0.2 meters per second. What is the rate of increase in the area of the circle at the instant when the circumference of the circle is 20π meters?

$$(A = \pi r^2 \quad C = 2\pi r)$$

- 4) A cylindrical tank has a height of 16 feet with the area of the circular base being $25\pi \text{ ft}^2$.

Water flows at 8 cubic feet per minute into the tank. How fast is the water level rising when the tank is half full? (*Area of circle* = πr^2) (*Volume of cylinder* = $\pi r^2 h$)