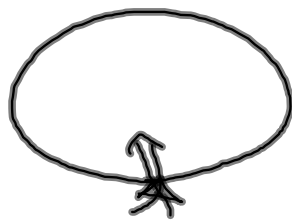


1.  $y = \sqrt{x} = x^{1/2}$  find  $\frac{dy}{dt}$  when  $x = 4$   
given  $\frac{dx}{dt} = 3$

$$\frac{dy}{dt} = \frac{1}{2} x^{-1/2} \cdot \frac{dx}{dt}$$

$$\frac{dy}{dt} = \frac{1}{2} (4)^{-1/2} \cdot 3$$

$$\frac{dy}{dt} = \frac{1}{2 \cdot \sqrt{4}} \cdot 3 = \frac{3}{4}$$



$$V = \frac{4\pi}{3} r^3$$

$$\frac{dV}{dt} = 4\pi \cdot 2r \cdot \frac{dr}{dt}$$

air in @  $3 \frac{\text{cm}^3}{\text{s}} = \frac{dV}{dt}$

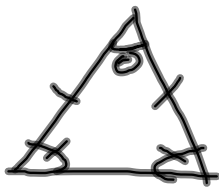
$\frac{dr}{dt}$  → find how the radius is changing when  $r = 3 \text{ cm}$

$$3 = \frac{4\pi}{3} \cdot 2 \cdot 3 \cdot \frac{dr}{dt}$$

$$3 = 8\pi \frac{dr}{dt}$$

$$\frac{dr}{dt} = \frac{3}{8\pi}$$

isosceles



$$A = \frac{1}{2}bh$$