

Erick Ramirez Caballero

11:

1: $A = 100 \text{ cm}^2$ $a = 15 \text{ cm}^2$ $F = 200 \text{ N}$

$$Q = v$$

$$Q =$$

$$A \cdot$$

1

2:

$$A = \pi \cdot d^2$$

$$F = \frac{F}{A} \cdot a$$

$$A = \frac{\pi \cdot 900}{4} = \frac{2827.43}{4} \quad A = 706.85$$

$$a = \frac{\pi \cdot 4}{4} = \frac{12.56}{4} = 3.14$$

$$f = \frac{35000 \cdot 3.14}{706.85}$$

$$f = 49.51 \cdot 3.14$$

$$f = 155.46$$

3:

$$a = \frac{\pi \cdot 3^2}{4} = 7.06 \quad A = \frac{\pi \cdot 40^2}{4} = 1256.63 \text{ cm}^2$$

$$F = \frac{f}{a} \cdot A \quad F = \frac{180}{7.06} \cdot (1256.63)$$

$$F = 32038.72 \text{ Nw}$$

$$v = Q / A$$

$$Q = v * A$$

$$A = \pi r^2$$

$$r_{cm} = 0.01 \text{ mts}$$

$$0.0381 \text{ mts diam}$$

$$A = \pi (0.0190)^2$$

$$r_{cm} = 0.01 \text{ m}$$

$$0.0254 \text{ mts}$$

$$A = \pi$$

$$A_1 =$$

$$v_2$$

$$v_2$$

$$7: Q = v/t$$

$$Q = v * A$$

$$A = \pi r^2$$

$$F = \frac{F}{A} = q$$

$$F = \frac{5000}{3.14} (.3.14) \quad F = 50 \text{ N/w}$$

5:

$$A = \frac{q}{F} \cdot F$$

$$A = \frac{22}{150} \cdot 2500$$

$$A = 366.66 \text{ cm}^2$$

6:

a) $v = x$

$$v = 1 * 1 * 1 = 1^3$$

$$v = (0.2 \text{ mt})^2$$

$$v = 0.008 \text{ mt}^2$$

b) $E = P \cdot v$

$$E = (9800 \text{ nw/mt}^3) (0.008 \text{ mt}^3)$$

$$E = 78.40 \text{ nw}$$

c)

$$P_{AP} = P - E = (655 \text{ nw}) - (78.40 \text{ nw})$$

$$P_{AP} = 576.60 \text{ N/w}$$

2 pulgadas = 0.0508 m diametro / 2 = 0.0254

$$A = \pi (0.0254 \text{ m}^2)^2 = 3.14 * 0.00064516 = 0.002027$$

$$Q = 4 \text{ mt/seg} * 0.0020 \text{ m}^2 = 0.008 \text{ m}^3$$

85

$$T = V / Q$$

$$1m = 1000 \text{ litros}$$

$$V = 10m^3 = 10000 \text{ litros}$$

$$Q = 40 \text{ l / seg}$$

$$T = 10000 / 40 = 250 \text{ seg}$$

90

$$Q = V / t$$

$$Q = V \times A$$

$$A = \pi r^2$$

$$2 \text{ pulgadas} = 0.0508 \text{ diametro } / 2 = 0.0254 \text{ m radio}$$

$$A = \pi (0.0254 \text{ m})^2 = 3.14 * 0.00064516 = 0.0020 \text{ m}^2$$

$$Q = 4 \text{ m}^3 / \text{seg} * 0.0020 \text{ m}^2 = 0.008 \text{ m}^3$$

10:

a) gasto

b) flujo

$$a) Q_{\text{av}} / t = 1800 \text{ l} / 60 \text{ seg} = Q = 30 \text{ l / seg}$$

b) el flujo es el mismo que el gasto

11:

$$Q = v \cdot t$$

$$Q = v \cdot A \quad v = Q / A$$

$$A = \pi r^2$$

$$7 \text{ cm} = 0.07 \text{ mts} \quad 3.81 \text{ cm} = 0.0381 \text{ mts}$$

$$0.0381 \text{ mts diametro} / 2 = 0.01905 \text{ mts de radio}$$

$$A = \pi (0.01905 \text{ m})^2 = 3.14 \cdot 0.000363 = 0.001140 \text{ m}^2$$

$$7 \text{ cm} = 0.07 \text{ mts} \quad 2.54 \text{ cm} = 0.0254 \text{ mts}$$

$$0.0254 \text{ mts diametro} / 2 = 0.0127 \text{ mts de radio}$$

$$A = \pi (0.0127 \text{ m})^2 = 3.14 \cdot 0.00016 = 0.00050 \text{ m}^2$$

$$A_1 \cdot v_1 = A_2 \cdot v_2$$

$$v_2 = A_1 \cdot v_1 / A_2$$

$$v_2 = 0.001140 \text{ m}^2 \cdot 3 \text{ mts} / \text{seg} / 0.00050 \text{ m}^2$$

$$v_2 = 0.00342 / 0.00050 = 6.84 \text{ mts} / \text{seg}$$