

## 4.4 Modelling with Formulas

March 2, 2017 7:45 PM

pg 215 # 1, 2, 3, 8, 12, 15

$$1. a) \frac{P}{4} = \frac{4s}{4}$$
$$\frac{P}{4} = s$$

$$b) A = P + I$$
$$A - I = P + I - I$$
$$A - I = P$$

$$c) \frac{C}{2\pi} = \frac{2\pi r}{2\pi}$$
$$\frac{C}{2\pi} = r$$

$$d) y = mx + b$$
$$y - mx = mx - mx + b$$
$$y - mx = b$$

$$3. a) C = 2.5l$$

when  $l = 6 \text{ in}$ ,  $C = 2.5l$        $6 \text{ in is } 15 \text{ cm}$   
 $= 2.5(6)$   
 $= 15.0 \text{ cm}$

when  $l = 3 \text{ ft}$ ,  $C = 2.5l$        $3 \text{ ft is } 90 \text{ cm}$   
 $3 \text{ ft} = 3 \times 12 \text{ in}$        $= 2.5(36)$   
 $= 36 \text{ in}$        $= 90 \text{ cm}$

$$b) \frac{C}{2.5} = \frac{2.5l}{2.5}$$

$$\frac{C}{2.5} = l$$

$$c) \frac{C}{2.5} = l$$

there are 30 in in 75 cm

$$\frac{75}{2.5} = l$$
$$30 = l$$

1 m is 100 cm

$$\frac{100}{2.5} = l$$

$$\frac{100}{2.5} = l$$

$$40 = l$$

100 cm or 1 m is 40 in

$$8. A = \frac{p^2}{16}$$

$$16(A) = \frac{16p^2}{16}$$

$$16A = p^2$$

$$\sqrt{16A} = \sqrt{p^2}$$

$$J16A = Jp^2$$

$$\sqrt{16A} = p$$

b)  $A = 25 \text{ cm}^2$

$$P = \sqrt{16A}$$

$$P = \sqrt{16(25)}$$

$$P = \sqrt{400}$$

$$P = 20$$

12.

$$\frac{PV}{P} = \frac{nRT}{P}$$

$$V = \frac{nRT}{P}$$

$$\frac{PV}{RT} = \frac{nRT}{RT}$$

$$\frac{PV}{RT} = n$$

$$\frac{PV}{nT} = \frac{nRT}{nT}$$

$$\frac{PV}{nT} = R$$

$$\frac{PV}{nR} = \frac{nRT}{nR}$$

$$\frac{PV}{nR} = T$$

15.

$$d = vt + \frac{1}{2}at^2$$

$$d - \frac{1}{2}at^2 = vt + \frac{1}{2}at^2 - \frac{1}{2}at^2$$

$$d - \frac{1}{2}at^2 = vt$$

$$2d - 2\left(\frac{1}{2}at^2\right) = 2vt$$

$$\frac{2d}{2t} - \frac{at^2}{2t} = \frac{2vt}{2t}$$

$$\frac{d}{t} - \frac{at}{2} = v$$