



1. $B \propto l$
 $B = kl$

2. $p \propto q^2$
 $p = kq^2$
 $0.5 = k(1.5)^2$
 $k = \frac{2}{9}$

$$p = \frac{2}{9}q^2$$
$$p = \frac{2}{9}(6)^2$$
$$p = 8$$

3. $a \propto \frac{\sqrt[3]{b}}{c}$
 $a = \frac{k\sqrt[3]{b}}{c}$

4. $de = \frac{1}{2} \times 30 = 15$
 $de = 5 \times 3 = 15$
 $d \propto \frac{1}{e}$
 $d = \frac{k}{e}$

5. $p \propto \frac{q^2}{r^3}$
 $p = \frac{kq^2}{r^3}$
 $\frac{20}{27} = \frac{k(2)^2}{3^3}$
 $k = 5$

$$p = \frac{5q^2}{r^3}$$
$$p = \frac{5(3)^2}{4^3}$$
$$p = \frac{45}{64}$$

6. (a) $T \propto nf$
 $T = knf$

(b) $\frac{1}{6} = k(3)(0.6)$
 $k = \frac{5}{54}$
 $T = \frac{5}{54}nf$
 $T = \frac{5}{54}(5)(2.4)$
 $T = \frac{10}{9}$

7. (a) $A \propto \frac{1}{s^3}$
 $A = \frac{k}{s^3}$
 $3.125 = \frac{k}{(0.2)^3}$
 $k = 0.025$
 $A = \frac{0.025}{s^3}$

(b) $A = \frac{0.025}{(0.125)^3}$
 $= 12.8$

(c) $0.003125 = \frac{0.025}{s^3}$
 $s^3 = 8$
 $s = 2$

8. (a) $r \propto \frac{1}{t^2}$
 $r = \frac{k}{t^2}$
 $0.5 = \frac{k}{13^2}$
 $k = 84.5$
 $r = \frac{84.5}{t^2}$

(b) $3.38 = \frac{84.5}{t^2}$
 $t^2 = 25$
 $t = \pm 5$

(c) $r = \frac{84.5}{10^2}$
 $= 0.845$

$$9. (a) \quad Q \propto \frac{w}{e^2}$$

$$Q = \frac{kw}{e^2}$$

$$\frac{7}{16} = \frac{k(6)}{8^2}$$

$$k = \frac{14}{3}$$

$$Q = \frac{14w}{3e^2}$$

$$(b) \quad 0.75 = \frac{14(4)}{3x^2}$$

$$x^2 = \frac{224}{9}$$

$$x = \pm 4.99$$

$$\frac{2}{3} = \frac{14y}{3(6)^2}$$

$$y = 5.14$$

$$10. (a) \quad \text{Jejari bertambah 20\%: } j \times \frac{120}{100}$$

Radius increases by 20%

$$\left(j \times \frac{120}{100}\right)^2 = 1.44j^2$$

$$V \propto j^2t$$

$$\times 1.44 : 1.44V \propto 1.44j^2t$$

Isi padu silinder bertambah 44%.
The volume of the cylinder increases by 44%.

$$(b) \quad V \propto j^2t$$

$$V = kj^2t$$

$$269.5 = k(3.5)^2(7)$$

$$k = \frac{22}{7}$$

$$V = \frac{22}{7}j^2t$$

$$(c) \quad 1089 = \frac{22}{7}j^2(9)$$

$$j^2 = \frac{77}{2}$$

$$j = 6.20$$