

Sangam Skm College- Nadi

Year 10

Mathematics

Worksheet 2

Solutions:

Pressure (P) is defined as $P = \frac{F}{A}$

(i) Make A the subject of the formula

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

$$\frac{PA}{P} = \frac{F}{P}$$

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

(ii) If $F = 3$ and $P = \frac{1}{3}$, find the value of A .

$$A = \frac{3}{\frac{1}{3}} = 9$$

A curved surface of a cylinder with radius, r and height, h , is given by

$$A = 2 \pi r h$$

(i) Make h the subject

$$\frac{A}{2 \pi r} = \frac{2 \pi r h}{2 \pi r}$$

$$\frac{A}{2 \pi r} = h$$

(ii) Find the height, h when $r = 4\text{cm}$ and the surface area is 150 cm^2 .

$$\begin{aligned} h &= \frac{A}{2 \pi r} \\ &= \frac{150}{2 \times \pi \times 4} \\ &= \underline{5.97} \end{aligned}$$

If $m = -3$, $n = 2$, $p = -1$, find the value of:

(i) $m n$

$$-3 \times 2 = \underline{-6}$$

$$(ii) \quad \frac{m+n}{p}$$

$$\frac{-3+2}{-1} = \underline{1}$$

$$(iii) \quad m^2 - n^2$$

$$(-3-2)(-3+2) = \underline{5}$$

Solve each of the following equations:

$$(i) \quad \frac{2x-7}{3} = 5$$

$$\frac{2x-7}{3} \cdot 3 = 5 \times 3$$

$$2x-7+7 = 15+7$$

$$\cancel{2}x = \frac{22}{2}$$

$$\underline{x = 11}$$

$$(ii) \quad 8r-4 = 3r+6$$

$$8r-3r = 6+4$$

$$\frac{5r}{5} = \frac{10}{5}$$

$$\underline{r = 2}$$

$$(iii) \quad \frac{y-6}{2} = 7$$

$$\frac{y-6}{2} \cdot 2 = 7 \cdot 2$$

$$y-6+6 = 14+6$$

$$\underline{y = 20}$$

$$(iv) \quad 6(3+c) = -18$$

$$\frac{6(3+c)}{6} = \frac{-18}{6}$$

$$3-3+c = -3-3$$

$$\underline{c = -6}$$

Solve each of the following equations:

$$(i) \quad 6m-1 = 3m+11$$

$$6m-3m = 11+1$$

$$\frac{\cancel{3}m}{3} = \frac{12}{3}$$

$$\underline{m = 4}$$

$$(ii) \quad \frac{3}{2-x} = 9$$

$$\frac{3(2-x)}{(2-x)} = 9(2-x)$$

$$3 = 18-9x$$

$$3-18 = -9x$$

$$\frac{-15}{-9} = \frac{-9x}{-9}$$

$$\underline{\frac{15}{9} = x}$$

$$(iii) \quad \frac{6}{y} + 1 = 2$$

$$\frac{6}{y} + 1 - 1 = 2 - 1$$

$$\frac{\cancel{6}}{\cancel{y}} = 1 \cdot y$$

$$\underline{6 = y}$$