REARRANGING FORMULAE — EXERCISE

Make the letter in square brackets the subject in the following formulae:

1) $C = 2\pi rh$ $[h]$

2) $S = \frac{1}{2}n(a+d)$ $[a]$

3) $c = \sqrt{a^2+b^2}$ $[a]$

4) $t = \sqrt{\frac{2s}{g}}$ $[s]$

5) $\frac{PV}{T} = k$ $[T]$

6) $y = 3\sqrt{1-x^2}$ $[x]$

7) $x^2 + y^2 = 1$ $[y]$

8) $v = w\sqrt{a^2-x^2}$ $[x]$

9) $y = \frac{2x}{x+1}$ $[x]$

10) $m = \frac{p+q}{p-q}$ $[p]$

REARRANGING FORMULAE EXERCISE

1) $C = 2\pi rh$ [h]

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

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

2) $S = \frac{1}{2}n(a+d)$ [a]

$2S = n(a+d)$

$2S = na + nd$

$2S - nd = na$

$\frac{2S-nd}{n} = a$

$a = \frac{2S-nd}{n}$

3) $c = \sqrt{a^2+b^2}$ [a]

$c^2 = a^2 + b^2$

$c^2 - b^2 = a^2$

$\sqrt{c^2-b^2} = a$

$a = \sqrt{c^2-b^2}$

4) $t = \sqrt{\frac{2S}{g}}$ [s]

$t^2 = \frac{2S}{g}$

$gt^2 = 2S$

$\frac{gt^2}{2} = S$

$S = \frac{gt^2}{2}$

5) $\frac{PV}{T} = k$ [T]

$PV = kT$

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

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

6) $y = 3\sqrt{1-x^2}$

$\frac{y}{3} = \sqrt{1-x^2}$

$\frac{y^2}{9} = 1 - x^2$

$x^2 = 1 - \frac{y^2}{9}$

$x = \sqrt{1 - \frac{y^2}{9}}$

OR

$x = \sqrt{\frac{9-y^2}{9}}$

$x = \frac{\sqrt{9-y^2}}{3}$

REARRANGING FORMULAE — EXERCISE

7) $x^2 + y^2 = 1$ [y]

$y^2 = 1 - x^2$

$y = \sqrt{1 - x^2}$

$\frac{y}{2-y} = x$

$x = \frac{y}{2-y}$

8) $V = w\sqrt{a^2 - x^2}$ [x]

$\frac{V}{w} = \sqrt{a^2 - x^2}$

$\frac{V^2}{w^2} = a^2 - x^2$

$x^2 = a^2 - \frac{V^2}{w^2}$

$x = \sqrt{a^2 - \frac{V^2}{w^2}}$

OR $x = \sqrt{\frac{a^2w^2 - V^2}{w^2}}$

$x = \frac{\sqrt{a^2w^2 - V^2}}{w}$

9) $y = \frac{2x}{x+1}$ [x]

$y(x+1) = 2x$

$yx + y = 2x$

$y = 2x - yx$

$y = x(2-y)$

10) $m = \frac{p+q}{p-q}$ [p]

$m(p-q) = p+q$

$mp - mq = p+q$

$mp - p = q + mq$

$p(m-1) = q(1+m)$

$p = \frac{q(m+1)}{m-1}$