

FACTORIZATION (B), ALGEBRAIC FRACTION AND FORMULA

Form 2 Regular Course

Vol 3

Part 4 – Formulas and Substitution

8. $9 = \frac{2+3+z}{2(3)+3z+2z}$

$$9(6 + 5z) = 5 + z$$

$$49 = -44z$$

$$z = -\frac{49}{44}$$

9. (a) $\frac{4}{16} = \frac{y+4}{y-8}$

$$y - 8 = 4(y + 4)$$

$$3y = -24$$

$$y = -8$$

(b) $\frac{4}{x} = \frac{10+4}{10-8}$

$$\frac{4}{x} = 7$$

$$x = \frac{4}{7}$$

10. (a) $S_1 = \frac{1}{2}(70)(71) = 2485$

(b) $S_2 = \frac{1}{2}(100)(101) = 5050$

(c) $S_3 = S_2 - S_1 = 5050 - 2485 = 2565$

(d) $S_4 = 2S_1 = 2(2485) = 4970$

Part 5 – Changing subject

1.

$$(b) \quad s = \frac{aR^n - a}{R - 2}$$

$$s(R - 2) = a(R^n - 1)$$

$$a = \frac{s(R - 2)}{R^n - 1}$$

$$(d) \quad \frac{a}{b} = \frac{k - p}{k}$$

$$ak = bk - bp$$

$$(b - a)k = bp$$

$$k = \frac{bp}{b - a}$$

$$(f) \quad s = \frac{abc}{40(a - b)}$$

$$40as - 40bs = abc$$

$$40as = b(ac + 40s)$$

$$b = \frac{40as}{ac + 40s}$$

$$(h) \quad \frac{1}{u} - \frac{1}{v} = \frac{1}{f}$$

$$\frac{1}{u} - \frac{1}{f} = \frac{1}{v}$$

$$\frac{1}{v} = \frac{f - u}{fu}$$

$$v = \frac{fu}{f - u}$$

$$(j) \quad a + 2 = \frac{14}{b} - 3$$

$$a + 5 = \frac{14}{b}$$

$$\frac{a + 5}{14} = \frac{1}{b}$$

$$b = \frac{14}{a + 5}$$

$$(l) \quad t = \frac{2s+u}{1-su}$$

$$t - tsu = 2s + u$$

$$t - u = 2s + tsu$$

$$t - u = s(2 + tu)$$

$$s = \frac{t-u}{2+tu}$$

$$(n) \quad b = \frac{sh-it}{is}$$

$$bis = sh - it$$

$$i(bs+t) = sh$$

$$i = \frac{sh}{bs+t}$$

$$(p) \quad 2w = \frac{1}{tf} - 3$$

$$2w + 3 = \frac{1}{tf}$$

$$\frac{1}{t} = f(2w+3)$$

$$t = \frac{1}{f(2w+3)}$$

$$(r) \quad 2f = \frac{a-3b}{bc+4a}$$

$$2fbc + 8af = a - 3b$$

$$b(2fc+3) = a - 8af$$

$$b = \frac{a-8af}{2fc+3}$$

$$(t) \quad m\left(1 + \frac{100}{3r}\right) = n\left(1 - \frac{100}{3r}\right)$$

$$m + \frac{100m}{3r} = n - \frac{100n}{3r}$$

$$\frac{100}{3r}(m+n) = n-m$$

$$\frac{100}{3r} = \frac{n-m}{m+n}$$

$$\frac{1}{r} = \frac{3(n-m)}{100(m+n)}$$

$$r = \frac{100(m+n)}{3(n-m)}$$

$$(v) \quad \frac{smart}{1-am} = 2pc$$

$$smart = 2pc - 2ampc$$

$$a(smrt + 2mpc) = 2pc$$

$$a = \frac{2pc}{smrt + 2mpc}$$

$$(x) \quad \frac{3x}{y} + x = z$$

$$x\left(\frac{3+y}{y}\right) = z$$

$$x = \frac{zy}{3+y}$$

$$(z) \quad \frac{c+at}{b-at} = f^2$$

$$c+at = f^2(b-at)$$

$$c = f^2b - f^2at - at$$