

Name: 'Asyiqin (23)

Class: 3C3

Date: 14 Nov. 03 No. -

Maths D Holiday Hw

Algebra 3+ PL

6a. $\frac{9}{4} = \frac{u}{4}$

$u^2 = 36$

$u = -6$ or 6 #

b. $\frac{6}{t} - \frac{5}{t+2} = 1$

$\frac{6(t+2) - 5t}{t(t+2)} = 1$

$\frac{t+12}{t(t+2)} = 1$

$t+12 = t^2+2t$

$t^2+t-12=0$

$(t+4)(t-3)=0$

$t+4=0$ or $t-3=0$

$t = -4$ or 3 #

7. $y=2x \dots (1)$

$2x-3y=8 \dots (2)$

Subst (1) into (2),

$2x-6x=8$

$-4x=8$

$x=-2$ #

$y=-4$ #

8a. $3x-4=x+10$

$2x=14$

$x=7$ #

b. $(2y+3)^2=25$

$2y+3=5$ or $2y+3=-5$

$2y=2$

$2y=-8$

$y=1$ or -4 #

9. $2x-4y=13 \dots (1)$

$3x-5y=16\frac{1}{2} \dots (2)$

$(1) \times 3$

$6x-12y=39 \dots (3)$

$(2) \times 2$

$6x-10y=33 \dots (4)$

$(3)-(4)$

$6x-12y-6x+10y=39-33$

$-2y=6$

$y=-3$ #

$2x-4(-3)=13$

$2x=1$

$x=\frac{1}{2}$ #

10a. $\frac{4}{p}=5$

$5p=4$

$p=\frac{4}{5}$ #

b. $3(q+2)=q$

$3q+6=q$

$2q=-6$

$q=-3$

c. $\frac{3}{r-2} + \frac{1}{r} = 0$

$\frac{3}{r-2} = -\frac{1}{r}$

$-1(r-2)=3r$

$-r+2=3r$

$4r=2$

$r=\frac{1}{2}$ #

Paper 2

6. $3x^2 - 5x - 1 = 0$

$$x = \frac{5 \pm \sqrt{5^2 - 4(3)(-1)}}{2(3)}$$

$$= \frac{5 \pm \sqrt{37}}{6}$$

$$= \frac{5 + \sqrt{37}}{6} \quad \text{or} \quad \frac{5 - \sqrt{37}}{6}$$

$$= 1.8471... \quad \text{or} \quad -0.18046...$$

$$\therefore x = 1.85 \quad \text{or} \quad -0.18 \quad (2 \text{ dp}) \#$$

7a. $\frac{3}{x+2} - \frac{4}{2x-3}$

$$= \frac{3(2x-3) - 4(x+2)}{(x+2)(2x-3)}$$

$$= \frac{6x - 9 - 4x - 8}{(x+2)(2x-3)}$$

$$= \frac{2x - 17}{(x+2)(2x-3)} \#$$

b. $\frac{2y^2 - 3y - 5}{y^2 - 1}$

$$= \frac{(2y-5)(y+1)}{(y+1)(y-1)}$$

$$= \frac{2y-5}{y-1} \#$$

c. $2w^2 + 7w + 4 = 0$

$$w = \frac{-7 \pm \sqrt{7^2 - 4(2)(4)}}{2(2)}$$

$$= \frac{-7 \pm \sqrt{17}}{4}$$

$$= \frac{-7 + \sqrt{17}}{4} \quad \text{or} \quad \frac{-7 - \sqrt{17}}{4}$$

$$= -0.719... \quad \text{or} \quad -2.7807...$$

$$\therefore w = -0.72 \quad \text{or} \quad -2.78 \quad (2 \text{ dp}) \#$$

8a. $2k - 3(2-k) + 4$

$$= 2k - 6 + 3k + 4$$

$$= 5k - 2 \#$$

b. $\frac{5t}{3} - \frac{t}{2} = 1$

$$\frac{10t - 3t}{6} = 1$$

$$7t = 6$$

$$\therefore t = \frac{6}{7} \#$$

c. $y^2 + 3y = 6$

$$y^2 + 3y - 6 = 0$$

$$y = \frac{-3 \pm \sqrt{3^2 - 4(1)(-6)}}{2(1)}$$

$$= \frac{-3 \pm \sqrt{33}}{2}$$

$$= \frac{-3 + \sqrt{33}}{2} \quad \text{or} \quad \frac{-3 - \sqrt{33}}{2}$$

$$= 1.372 \dots \quad \text{or} \quad -4.372 \dots$$

$$\therefore y = 1.37 \quad \text{or} \quad -4.37 \quad (2 \text{ dp}) \#$$

9a. $144 \text{ km} = 144000 \text{ m}$

$$h \text{ hrs} = 3600 \text{ h secs}$$

$$\text{Av. speed} = \frac{144000}{3600 \text{ h}}$$

$$= \frac{40}{h} \text{ m/s} \#$$

b. $3(2x - 7) = 6 - 4(2 - x)$

$$6x - 21 = 6 - 8 + 4x$$

$$2x = 19$$

$$\therefore x = 9.5 \#$$

10a. $a = 2, b = -5$

$$ab^2 = 2 \times (-5)^2$$

$$= 50 \#$$

b(i) $\frac{5}{c} = 12$

$$12c = 5$$

$$c = \frac{5}{12} \#$$

b(ii) $(x+2)(x-3) = 14$

$$x^2 - x - 6 - 14 = 0$$

$$x^2 - x - 20 = 0$$

$$(x+4)(x-5) = 0$$

$$x+4 = 0 \quad \text{or} \quad x-5 = 0$$

$$\therefore x = -4 \quad \text{or} \quad 5 \#$$