1 (c) Solve $\frac{4x-2}{3} - \frac{5-3x}{4} = 6$

Show clear algebraic working.

$(4)(3)\frac{4x-2}{3} - \frac{5-3x}{4}(3)(4) = 6(3)(4)$

$(4x-2)\times 4 - (5-3x)\times 3 = 6\times 4\times 3$ (1)

$16x - 8 - 15 + 9x = 72$ (1)

$25x = 95$ (1)

$x = \frac{95}{25} = 3.8$ (1)

$x =$ 3.8

(4)

(Total for Question 1 is 4 marks)

2 (d) Solve $3(2x - 5) = \frac{9 - x}{2}$

Show clear algebraic working.

$3(2x-5) = \frac{9-x}{2}$

$6x - 15 = \frac{9-x}{2}$ (1)

$2(6x-15) = 9-x$ (1)

$12x - 30 = 9 - x$

$12x + x = 9 + 30$ (1)

$13x = 39$

$x = \frac{39}{13}$

$= 3$ (1)

$x =$ 3

(4)

(Total for Question 2 is 4 marks)

Given that $\frac{w^5 \times w^n}{w^3} = w^{10}$

3 (c) work out the value of n.

$w^{5+n-3} = w^{10}$

$5+n-3 = 10$ (1)

$n+2 = 10$

$n = 8$ (1)

$n =$ 8

(2)

(Total for Question 3 is 2 marks)

Given that $4^{k+3} = 16 \times 2^k$

4 (c) find the value of k.
Show your working clearly.

$4^{k+3} = 16 \times 2^k$

$2^{2(k+3)} = 2^4 \times 2^k$ (1) (1)

$2(k+3) = 4 + k$

$2k + 6 = 4 + k$ (1)

$2k - k = 4 - 6$

$k = -2$ (1)

$k =$ -2

(4)

(Total for Question 4 is 4 marks)

Given that $\frac{y^5 \times y^n}{y^6} = y^{13}$

5 (b) work out the value of n.

$\frac{y^5 \times y^n}{y^6} = y^{13}$

$y^{5+n-6} = y^{13}$

$n - 1 = 13$ (1)

$n = 14$ (1)

$n =$ 14

(2)

(Total for Question 5 is 2 marks)