



REGULAR QUIZ 03

Form 1 Regular Course

Number Pattern

Linear Equations in one unknown

Part A – MC (@2 marks)

1.	A					
2.	A	$5\left(\frac{x}{4} + 6\right) = 40$ $\frac{x}{4} + 6 = 8$ $\frac{x}{4} = 2$ $x = 8$				
3.	C	<table border="1"> <tbody> <tr> <td>A: $3x = -12$ $x = -4$</td> <td>B: $-7x = 28$ $x = -4$</td> <td>C: $-2x = 6$ $x = -3$</td> <td>D: $-\frac{x}{2} = 2$ $x = -4$</td> </tr> </tbody> </table>	A: $3x = -12$ $x = -4$	B: $-7x = 28$ $x = -4$	C: $-2x = 6$ $x = -3$	D: $-\frac{x}{2} = 2$ $x = -4$
A: $3x = -12$ $x = -4$	B: $-7x = 28$ $x = -4$	C: $-2x = 6$ $x = -3$	D: $-\frac{x}{2} = 2$ $x = -4$			
4.	D	$\frac{3y-4}{6} = \frac{2-y}{3}$ $3(3y-4) = 6(2-y)$ $9y-12 = 12-6y$ $15y = 24$ $y = \frac{8}{5}$				
5.	C	$(x+3)(4-3x) = -3x(x-5) - 2x + 3$ $4x - 3x^2 + 12 - 9x = -3x^2 + 15x - 2x + 3$ $4x - 9x - 15x + 2x = 3 - 12$ $-18x = -9$ $x = \frac{1}{2}$				
6.	A	$a_3 = 2 - 6 = -4$ $a_5 = a_4 + a_3 = 2 + (-4) = -2$ $a_6 = a_5 + a_4 = -2 + 2 = 0$				

7.	C	By substitution, For $n=1, A=-2, B=3, C=-2, D=-2$ For $n=2, A=2, C=2, D=-2$ For $n=3, A=18, C=14$
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1. A 2. A 3. C 4. D 5. C
 6. A 7. C

Part B – Short Questions (37 marks)

1. $-(-6-x) = -12$

$6+x = -12$ 1M for removing – sign
 $x = -18$ 1M+1A for grouping terms

(3)

2. $-\frac{1-x}{2} = \frac{3}{4}$

$-2(1-x) = 3$

$-2+2x = 3$ 1M for multiplication
 $2x = 5$ 1M for division
 $x = \frac{5}{2}$

1A

(3)

3. $\frac{1}{2x} + 1 = 5$

$\frac{1}{2x} = 4$

$1 = 8x$ 1M for multiplication
 $x = \frac{1}{8}$

1A

(2)

4. $\frac{2x+1}{2} = 3x$

$2x+1 = 6x$ 1M for multiplication
 $4x = 1$ 1M for grouping terms
 $x = \frac{1}{4}$

1A

(3)

5. $2(1-x) = 5(1-4x)$

$2-2x = 5-20x$ 1M for multiplication

$2+18x = 5$

$18x = 3$ 1M for grouping terms

$x = \frac{1}{6}$ 1A

(3)

6. $\frac{x-2}{4} + \frac{x+3}{2} = 1$

$x-2+2(x+3) = 4$ 1M for multiplication

$x-2+2x+6 = 4$ 1M for expansion

$3x+4 = 4$

$3x = 0$ 1M for grouping terms

$x = 0$ 1A

(4)

7. (a) $\frac{6x}{5} - \frac{3(4-x)}{7} = 39$

$35 \left[\frac{6x}{5} - \frac{3(4-x)}{7} \right] = 39 \times 35$

$7(6x) - 15(4-x) = 1365$ 1M

$42x - 60 + 15x = 1365$ 1M

$57x = 1425$

$x = 25$ 1A

(b) By (a), let $x = 2y + 4$ 1M

$\frac{6(2y+4)}{5} - \frac{3[4-(2y+4)]}{7} = 39$

$\frac{6(2y+4)}{5} - \frac{3(-2y)}{7} = 39$

$\frac{6(2y+4)}{5} + \frac{3(2y)}{7} = 39$

$\therefore 2y + 4 = 25$

$2y = 21$

$y = \frac{21}{2}$ 1A

(5)

8. (a) common difference = $\frac{-9-12}{3} = -7$ 1M

$$a_1 = 12 - (-7) = 19$$

$$a_n = 19 + (n-1)(-7) = 26 - 7n$$
 1A

(b) Set $26 - 7n = -26$

$$n = \frac{52}{7}$$
 1M

Thus, I do not agree. 1A f.t.

(4)

9. (a)(i) General term = $-5 + (n-1)(3) = 3n - 8$ 1M+1A

(ii) General term = $3(2)^{n-1}$ 1M+1A accept $\frac{3}{2}(2^n)$

(b) General term

$$= \frac{3n - 8 - 1}{3(2^{n-1})}$$
 1M

$$= \frac{3n - 9}{3(2^{n-1})}$$

$$= \frac{n - 3}{2^{n-1}}$$
 1A

(6)