

REGULAR QUIZ 04

Form 1 Regular Course

Linear Equations in one unknown and Word problems

Part A - Short Questions (27 marks)

1. $2x - (10 - 3x) = 25$
- | | | |
|---------------------|----|---------------------|
| $2x - 10 + 3x = 25$ | 1M | for removing - sign |
| $5x = 35$ | 1M | for grouping terms |
| $x = 7$ | 1A | |
2. $\frac{4x}{3} - \frac{7}{3} = 5$
- | | | |
|-----------------------|----|--------------------|
| $4x - 7 = 5 \times 3$ | 1M | for multiplication |
| $4x = 22$ | 1M | for grouping terms |
| $x = \frac{11}{2}$ | 1A | |
3. $\frac{1-5x}{2} = \frac{9}{8}$
- | | | |
|--------------------|----|--------------------|
| $4(1-5x) = 9$ | 1M | for multiplication |
| $4 - 20x = 9$ | 1M | for expansion |
| $-20x = 5$ | | |
| $x = -\frac{1}{4}$ | 1A | |
4. $\frac{8}{3x} - 12 = -4$
- | | | |
|--------------------|----|--------------------|
| $\frac{8}{3x} = 8$ | 1M | for grouping terms |
| $8 = 24x$ | 1M | for multiplication |
| $x = \frac{1}{3}$ | 1A | |

$$5. \quad -\frac{5-7x}{4} = 8x$$

$$-(5-7x) = 32x \quad 1M \quad \text{for multiplication}$$

$$-5+7x = 32x$$

$$-5 = 25x \quad 1M \quad \text{for grouping terms}$$

$$x = -\frac{1}{5} \quad 1A$$

$$6. \quad 6(x-4) = 5[17-3(2x-13)]$$

$$6x-24 = 5(17-6x+39) \quad 1M \quad \text{for simplification}$$

$$6x-24 = 5(56-6x)$$

$$6x-24 = 280-30x \quad 1M \quad \text{for expansion}$$

$$36x = 304 \quad 1M \quad \text{for grouping terms}$$

$$x = \frac{76}{9} \quad 1A$$

$$7. \quad \frac{5x-3}{2} = \frac{x-3}{4} + (x-3)$$

$$2(5x-3) = (x-3) + 4(x-3) \quad 1M \quad \text{for multiplication}$$

$$10x-6 = x-3+4x-12 \quad 1M \quad \text{for expansion}$$

$$10x-6 = 5x-15$$

$$5x-6 = -15$$

$$5x = -9 \quad 1M \quad \text{for grouping terms}$$

$$x = -\frac{9}{5} \quad 1A$$

$$8. \quad \frac{3x-4}{4} - \frac{x-7}{3} = -\frac{5}{8}$$

$$6(3x-4) - 8(x-7) = -15 \quad 1M \quad \text{for multiplication}$$

$$18x-24-8x+56 = -15 \quad 1M \quad \text{for expansion}$$

$$10x = -47 \quad 1M \quad \text{for grouping terms}$$

$$x = -4.7 \quad 1A$$

Part B – MC (@2 marks)

1.	A	$45x\left(\frac{1}{3x} + \frac{1}{5x}\right) = \frac{4}{45}(45x)$ $15 + 9 = 4x$ $x = 6$
2.	B	$\frac{\left(\frac{x}{2} + x - 3\right) \times 8}{2} = 168$ $x = 30$ $\text{upper base} = \frac{30}{2} = 15$
3.	D	$\frac{x}{8} + 5 = \frac{x}{3}$ $\frac{5}{24}x = 5$ $x = 24$
4.	A	$x = \frac{1}{2}y, z = y - 15$ $x + y + z = 210$ $\frac{1}{2}y + y + y - 15 = 210$ $y = 90$ $x = \frac{1}{2}(90) = 45$
5.	B	<p>Let x be the larger part</p> $80 - x = \frac{2}{3}x$ $\frac{5}{3}x = 80$ $x = 48$

1. A 2. B 3. D 4. A 5. B

Part C – Word Problem (30 marks)

1. let x be the smallest number,
 $x + x + 2 + x + 4 - 2x = 13$ 2M for setting correct equation
 $x + 6 = 13$ 1M for simplification
 $x = 7$
 therefore, the smallest number is 7 1A

2. $10(9-x) + x - 45 = 10x + 9 - x$ 3M for setting correct equation

$90 - 10x + x - 45 = 10x + 9 - x$ 1M for simplification

$45 - 9x = 9x + 9$

$18x = 36$ 1M for grouping terms

$x = 2$

therefore, the number is 72 1A

3. let x be the age of her son now,

$52 - x = 4(x - 2)$ 2M for setting correct equation

$52 - x = 4x - 8$ 1M for simplification

$60 = 5x$

$x = 12$

therefore, her son is 12 years old now 1A

4. let x be the money B has,

$(x + 15) + x + (x + 15 - 8) = 160$ 3M for setting correct equation

$3x + 22 = 160$ 1M for simplification

$3x = 138$

$x = 46$

therefore, A has \$61, B has \$46, C has \$53 1A

5. let x be the number of hours they will meet,

$(65 + 75)x = 448$ 2M for setting correct equation

$140x = 448$ 1M for simplification

$x = 3.2$

therefore, they will meet after 3.2 hours 1A