

**Marking Scheme:**

Question	Score	
1 (10 Marks)		
2 (2.5 Marks)		
3 (2.5 Marks)		
4 (2Marks)		
5 (3 Marks)		<b>Signature</b>
<b>TOTAL</b>		

**Question 1:** (10 Marks)

**Form A**

Question	1	2	3	4	5	6	7	8	9	10
Answer	A	C	B	B	D	A	C	B	A	D

**Form B**

Question	1	2	3	4	5	6	7	8	9	10
Answer	D	A	A	C	B	D	B	C	D	C

**Question 2:** (2.5 points)

Perform and simplify the following:

$$\frac{x^2 + 4x - 21}{(x + 2)^2} \div \frac{x^2 - 49}{x^2 + 3x + 2}$$

**SOL:**

$$\begin{aligned} \frac{x^2 + 4x - 21}{(x + 2)^2} \div \frac{x^2 - 49}{x^2 + 3x + 2} &= \frac{x^2 + 4x - 21}{(x + 2)^2} \times \frac{x^2 + 3x + 2}{x^2 - 49} \\ &= \frac{(x - 3)\cancel{(x + 7)}}{(x + 2)(\cancel{x + 2})} \times \frac{\cancel{(x + 2)}(x + 1)}{(x - 7)\cancel{(x + 7)}} \\ &= \frac{(x - 3)(x + 1)}{(x + 2)(x - 7)} = \frac{x^2 - 2x - 3}{x^2 - 5x - 14} \end{aligned}$$

**Question 3:** (2.5 points)

Solve the equation  $(x+1)^2 = 25$

**SOL:**

$$(x+1)^2 = 25$$

$$x^2 + 2x + 1 = 25$$

$$x^2 + 2x - 24 = 0$$

$$(x+6)(x-4) = 0$$

$$x+6=0 \qquad x-4=0$$

$$x=-6 \qquad x=4$$

**Question 4:** (2 points)

Solve the following inequality:

$$\frac{x}{5} + \frac{2x}{15} + 2 \geq \frac{x}{10} + 1$$

**SOL:**

$$30\left(\frac{x}{5} + \frac{2x}{15} + 2 \geq \frac{x}{10} + 1\right)$$

$$6x + 4x + 60 \geq 3x + 30$$

$$7x \geq -30$$

$$x \geq -\frac{30}{7}$$

**Question 5:** (3 points)

Graph the equation  $y = -\frac{x}{3} + 2$

$x$	$y$	$(x, y)$
0	2	(0, 2)
3	1	(3, 1)

