

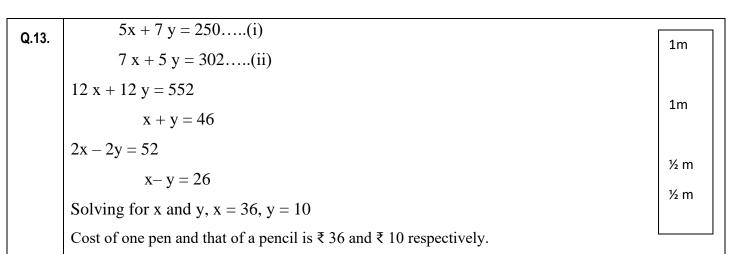
## Pre-Mid Term Examination (2025-26) Sub: MATHEMATICS (041)

Class: X Max Marks: 30 Date: 18 - 05 - 2025 Time: 1 hour

## Marking Scheme

Section A (1 mark each)				
Q.1.	(B) $2a = b$			
Q.2.	(D) 924			
Q.3.	(A) parallel			
Q.4.	(D)-19			
Q.5.	(C) $2 \times 3^2 \times 5^3 \times p^2$			
Q.6.	(B) p=r=-2			
Q.7.	(c) Assertion (A) is true but reason (R) is false.			
Section B (2 marks each)				
Q.8.	Sum of zeroes = $\sqrt{5} - 4 + \sqrt{5} + 4 = 2\sqrt{5}$	½ m		
	Product of zeroes = $(\sqrt{5}-4)(\sqrt{5}+4)=-11$	½ m		
	Polynomial = $k(x^2 - 2\sqrt{5}x - 11)$	1m		
	OR			
	Ans: $p(y) = ky^2 + 2y - 3k$ a = k, b = 2, c = -3k			
	According to the question, Sum of zeroes = $2 \times \text{product of zeroes}$			
	$\Rightarrow \frac{-b}{a} = 2 \times \frac{c}{a} \Rightarrow \frac{-2}{k} = 2 \times \frac{-3k}{k}$	1m		
	$\Rightarrow \frac{2}{k} = 6 \Rightarrow k = \frac{1}{3}$	1m		

Q.9.	2x + y = 13 (i)				
	4x - y = 17 (ii)				
	Solving (i) and (ii)				
	x = 5 & y = 3	1½ m			
	x - y = 2	½ m			
Q.10.	$7 \times 11 \times 13 + 2 \times 11 = 11 \times (7 \times 13 + 2)$	1m	]		
	the given number has more than two factors	1m			
	Hence, it is not a prime number.				
Section C (3 marks each)					
Q.11.	Let $p(x) = 3x^2 - 5x - 2$ = (3x + 1)(x - 2) $\therefore$ zeroes are $-\frac{1}{3}$ , 2 Sum of zeroes $= -\frac{1}{3} + 2 = \frac{5}{3} = -\frac{\text{Coeff. of } x}{\text{Coeff. of } x^2}$ Product of zeroes $= -\frac{1}{3} \times 2 = -\frac{2}{3} = \frac{\text{Constant term}}{\text{Coeff. of } x^2}$	1m 1m 1m			
Q.12.	Let $\sqrt{3}$ be a rational number.				
	$\therefore \sqrt{3} = \frac{p}{q}$ , where $q \neq 0$ and p & q are coprime.		1m		
	$3q^2 = p^2 \implies p^2$ is divisible by $3 \implies p$ is divisible by $3 \longrightarrow p$				
	$\Rightarrow$ p = 3a, where 'a' is some integer		1m		
	$9a^2 = 3q^2 \implies q^2 = 3a^2 \implies q^2$ is divisible by $3 \implies q$ is divisible by $3 \longrightarrow q$ . (ii)				
	(i) and (ii) leads to contradiction as 'p' and 'q' are coprime.		1m		
	$\therefore \sqrt{3}$ is an irrational number.				



OR

Let us denote the incomes of the two persons by ₹ 9x and ₹7x and their expenditures by ₹4y and ₹3y respectively.

$$9x - 4y = 2000$$

$$7x - 3y = 2000$$

$$27x - 12y = 6000$$

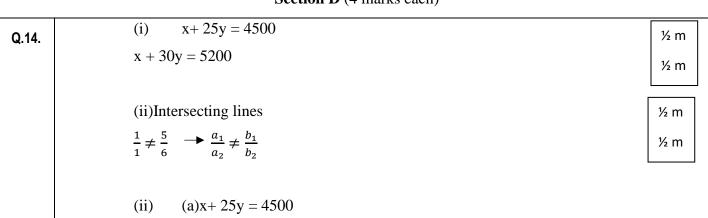
$$28x - 12y = 8000$$

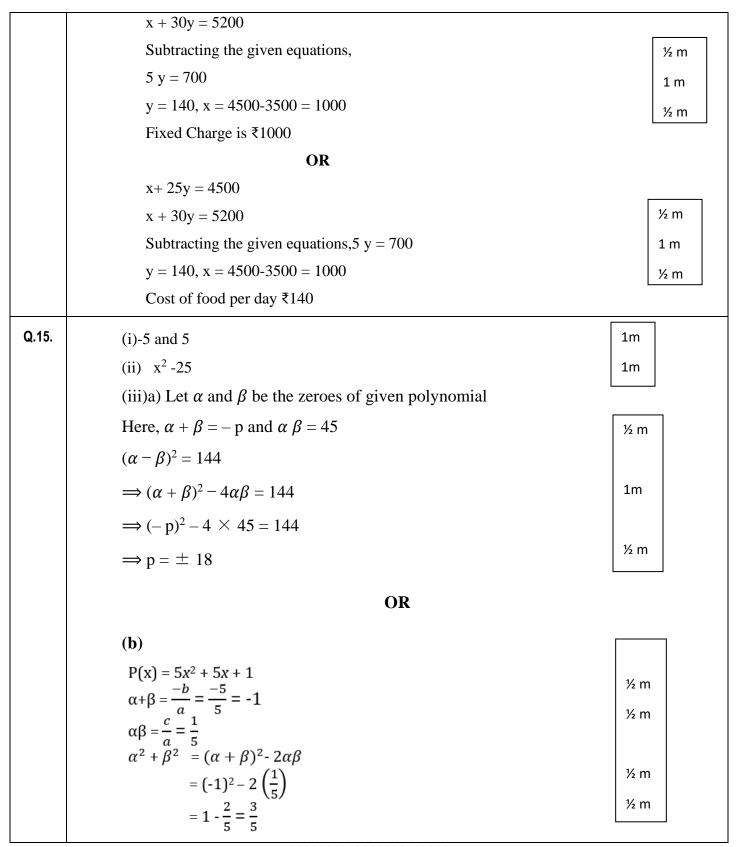
$$(28x - 27x) - (12y - 12y) = 8000 - 6000 \text{ i.e., } x = 2000 \text{ get } 9(2000) - 4y = 2000$$

$$\text{i.e., } y = 4000 \text{ So, } x = 2000, y = 4000.$$

$$\text{Therefore, the monthly incomes of the persons are } \text{$$18,000$ and $$14,000$, respectively.}$$

Section D (4 marks each)





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