$9\frac{1}{2} + 8 + 10 + 12 + 10 = \frac{49\frac{1}{2}}{50}$

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Part - A Section - A

1. 2 ✓ 2

2. $y = h$, $y = k$ ½ you can't write both.

3. 8 ✓ 1

4. 9 1

5 $a = 5$; $b = 0$; $c = 2$ ✓ 1

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

$\left(x^2 + \frac{1}{x}\right)^2 = 3^2$ 1

$x^2 + \frac{1}{x^2} + 2 \times \cancel{x} \times \frac{1}{\cancel{x}} = 9$

$x^2 + \frac{1}{x^2} + 2 = 9 \Rightarrow x^2 + \frac{1}{x^2} = 7$ ✓

$\boxed{7}$

7. -32 ✓ 1

8. The degree of a zero polynomial is undifined. ✓ 1

9. $x + y + z$ ✓ 1

10. 0 ✓ 1

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Section - II

11. i) (c)

ii) $-5(16) + 40(4) + 1.2$

$-80 + 160 + 1.2$

$= 80 + 1.2 = 81.2$

(b)

iii) d

iv) c

v) $x^2 - x - 2x + 2$

$x(x-1) - 2(x-1)$

$(x-1)(x-2)$

(c)

4

12. i) c

ii) a

iii) d

iv) d

v) b

4

Part-B
Section-I

Q13 2nd Quadrant
1st Quadrant
4th Quadrant
On y-axis

(2)

14. $y = 0$

$2x + 0 = 20$

$x = 20 \div 2 = 10$ (10, 0)

$x = 0$

$0 + 5y = 20$

$y = 4$ (0, 4)

$x = 1$

$2(1) + 5y = 20$

$2 + 5y = 20$

$5y = 18$

$y = 18/5$ (1, 18/5)

(2)

$x = 5$

$2(5) + 5y = 20$

$5y = 20 - 10$

$y = 2$ (5, 2)

15. ~~$6x^2 - 9x + 10x - 15$~~

$3x(2x - 3) + 5(2x - 3)$

$(2x - 3)(3x + 5)$

16. In the equation of a vertical line, coefficient of y term is 0

$(\lambda + 1)x - (3\lambda + 2)y = -1$

$(3\lambda + 2) = 0$ ← (Why?)

$3\lambda = -2$

$\lambda = -\frac{2}{3}$ ✓

(2)

17. $(1)^4 + 3(1)^3 + 7(1)^2 + 6(1) + 2$

$= 1 + 3 - 7 + 6 + 2$

$= 5$ ✓

(2)

Section - II

18) a) $x + 2 = 0$

$x = -2$

$(-2)^3 + 3(-2)^2 + 5(-2) + 6$

$-8 + 12 - 10 + 6 = 0$

$\therefore x + 2$ is a factor of $x^3 + 3x^2 + 5x + 6$.

b) If $x-1$ is a factor, when divided the remainder is 0.

$x-1=0$

$x=1$

(3)

$4(1)^3+3(1)^2-4(1)+k=0$

$4+3-4+k=0$

$3+k=0$

$\boxed{k=-3}$

19. i) $(-3,0)$
ii) $(-5,2)$
iii) $(6,2)$
iv) G
(3) v) C
vi) E

20. i) $(-3)+(6)=5$

$3 \neq 5$

∴ It is not the equation $x+y=5$

ii) $2(-3)+(6)=10$

$-6+6=10$

$0 \neq 10$

∴ It is not the equation $2x+y=10$

iii) $2(-3) + 3(6) = 12$

$-6 + 18 = 12$

$12 = 12$

$2(0) + 3(4) = 12$

$0 + 12 = 12$

$12 = 12$

$2(3) + 3(2) = 12$

$6 + 6 = 12$

$12 = 12$

3

∴ The line shows the equation $2x + 3y = 12$

21. $(3x)^3 + y^3 + (2z)^3 - 3(3x \times y \times 2z)$

from identity

$= (3x + y + 2z)(9x^2 + y^2 + 4z^2 - 3xy - 2yz - 6xz)$

3

Section - III

22 a) $x - 4 = 0$

$x = 4$

$k(4)^3 + 3(4)^2 - 3 = 2(4)^3 - 5(4) + k$

$64k + 48 - 3 = 128 - 20 + k$

$64k + 45 = 108 + k$

$63k = 63$

$k = 63 \div 63$

$= 1$ ✓

b) $4x^2 - 2x - 2x + 1$

$2x(2x-1) - [-1(2x-1)]$

$2x(2x-1) + (2x-1)$

$(2x-1)(2x+1)$

$4x^2 - 4x + 1$

$(2x)^2 - 2 \times 1 \times 2x + 1^2$

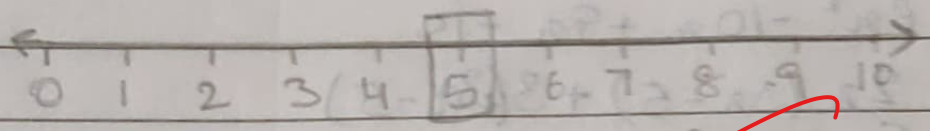
from identity, $(a-b)^2$

$(2x-1)^2$ ✓

5

23. a)

Linear equation for the point $x=5$ in one variable.



b) $x+y=5$

$x=0$

$0+y=5$

$y=5$ (0, 5)

$y=0$

$x+0=5$

$x=5$ (5, 0)

base of triangle = 5

height of triangle = 5

$\text{area} = \frac{1}{2} \times 5 \times 5$

$= 12.5$

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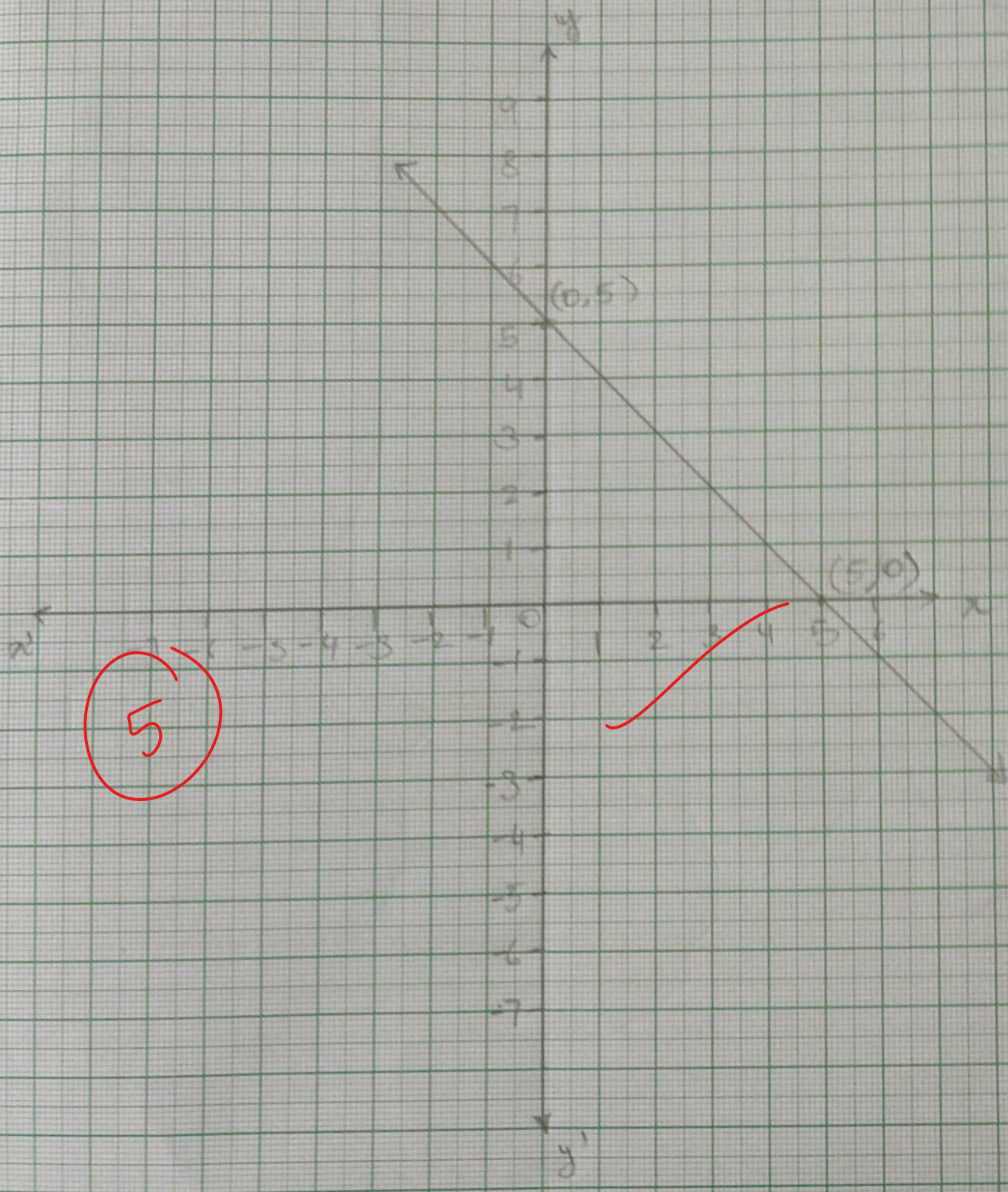
23 b)



5

27 Abhinav 9B Math

Part -B

Section - I

15. $6x^2 - 10x + 9x - 15$

$2x(3x-5) + 3(3x-5)$

$(2x+3)(3x-5)$

2