

$$\sqrt{\frac{2}{3} + \frac{2}{3} + \frac{1}{3}}$$



$$\text{Area} = \frac{1}{2} \times \left(\frac{\pi r^2}{\pi R^2} \right) / \sqrt{R^2 - r^2}$$

$$S = \left(\frac{1}{2} \log \frac{1}{1 - \rho^2} \right) / \log 2$$

$$St = \left(24031 \times \frac{1}{0.01} \times \frac{1}{932} \right)$$

5. $\frac{1}{2} \times 10^{-3} \text{ mol}$

b)

i)

$$\frac{2x+3}{3} = \frac{5x+6}{2}$$

$$2(2x+3) = 3(5x+6)$$

$$4x+6 = 15x+18$$

$$-11x = 12 \Rightarrow x = -\frac{12}{11}$$

$$x = -\frac{12}{11}$$

ii)

$$\frac{2x+1}{3} - \frac{x}{6} = \frac{6x+5}{2}$$

$$2x+1$$

$$2(2x+1) - (2x+1) = 3(6x+5)$$

$$4x+2 - 2x-1 = 18x+15$$

$$2x+1 = 18x+15$$

$$-16x = 14 \Rightarrow x = -\frac{7}{8}$$

$$x = -\frac{7}{8}$$

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$$x = -\frac{7}{8}$$

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$$1 \log (2+1) = \log (2+1) = \log (3)$$

$$\log (2+1)^2 = \log (3)^2$$

$$\log (3) \log (3) = \log (3) \log (3)$$

$$2x^2 + 18x + 12 = x^2 + 18x + 12$$

$$2x^2 + 18x + 12 = 8x^2 + 18x + 12$$

$$2x^2 + 18x + 12 = 0$$

$$a \quad b \quad c$$

$$x = (2 \pm 1) \sqrt{10} \log (2)$$

$$x = (2)^2 \log (2)$$

$$x = (2)^2 \log (2)$$

$$x = 4 \log (2)$$

$$x = 2 \pm \sqrt{10}$$

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

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

$$x = (2 \pm \frac{1}{2})$$

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

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

• (iii) Identify turning

points

D)

$$x^2 + 8x + 15 = 0$$

$$(x+3)(x+5)$$

$$x^2 + x + 15x + 15$$

$$x^2 + 16x + 15 = 0$$

$x+3=0$	$x+5=0$
$x=-3$	$x=-5$

$$4x^2 - 3x - 3 = 0$$

$$(4x-3)(x+1) = 0$$

$$4x-3=0 \quad \text{or} \quad x+1=0$$

$$x = \frac{3}{4} \quad \text{or} \quad x = -1$$

$$a) \quad x^2 + 17x + 30 = 0$$

$$x^2 + 17x + (-30) = 0 \quad (-30) = (-5)(-6)$$

$$x^2 + 17x + (-30) = 0$$

$$(x+5)(x+6) = 0$$

$$x+5=0 \quad \text{or} \quad x+6=0$$

$$x+5=0 \quad \text{or} \quad x+6=0$$

$$x = -5 \quad \text{or} \quad x = -6$$

$$x^2 - 136 = 0$$

$$x^2 - 136 = 0 \quad \text{or} \quad 136$$

$$x^2 = 136$$

$$x = \pm \sqrt{136}$$

$$x = 16 \quad \text{or} \quad x = -16$$

Question 3

Q)



Find AC

Find BC

Sol: $\triangle ABC$ is an

•

$$x^2 - 5x + 6 = 0$$

$$(x-2)(x-3) = 0$$

•

$$x = \frac{5 \pm \sqrt{5^2 - 4 \cdot 1 \cdot 6}}{2 \cdot 1}$$

$$x = \frac{5 \pm \sqrt{25 - 24}}{2}$$

$$x = \frac{5 \pm \sqrt{1}}{2}$$

$$x = 3$$

•

$$x = \frac{5 \pm \sqrt{5^2 - 4 \cdot 1 \cdot 6}}{2 \cdot 1}$$

$$x = 0.5$$

• $x = 3$ or $x = 0.5$



c) $22R^2 + 24R + 5$
 $(9R+5) (3R+1)$

d) $22R^2 + 12R + 5R + 5$
 $22R^2 + 24R + 5$

e) $81Q^2 - 144Q$
 $9(3Q+4Q) (3Q-4Q)$
 $(27Q + 36Q) (3Q-4Q)$

$81Q^2 - 144Q$



c) $22R^2 + 24R + 5$
 $(9R+5) (3R+1)$

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$81Q^2 - 144Q$