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1901059

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$$\begin{aligned} \text{I (i)} \quad x^2 + 8x + 15 &= 0 & 1 \times 15 \\ (x+3)(x+5) &= 0 & 3 \times 5 \\ x = +3 \quad x = -5 \end{aligned}$$

$$\begin{aligned} \text{(ii)} \quad x^2 - 225 &= 0 \\ (x+15)(x-15) \\ x = -15 \quad x = +15 \end{aligned}$$

$$\begin{aligned} \text{(iii)} \quad x^2 + 11x + 30 &= 0 & 1 \times 30 \\ (x+5)(x+6) &= 0 & 2 \times 15 \\ x = -5 \quad x = -6 & & 3 \times 10 \\ & & 5 \times 6 \end{aligned}$$

$$\begin{aligned} \text{(iv)} \quad x^2 - 6x + 8 &= 0 & 1 \times 8 \\ (x-2)(x-4) & & 2 \times 4 \\ x = +2 \quad x = +4 \end{aligned}$$

$$\begin{aligned} \text{(v)} \quad 2x^2 + 9x + 7 &= 0 & 1 \times 7 \\ x &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \\ x &= \frac{-9 \pm \sqrt{9^2 - 4 \times 2 \times 7}}{2 \times 2} \\ x &= -1 \quad x = -3.5 \end{aligned}$$

2. $12x^2 + 5x = 7$

$12x^2 + 5x - 7 = 0$

$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$

$x = \frac{-5 \pm \sqrt{5^2 - 4 \times 12 \times -7}}{2 \times 12}$

$x_+ = 0.58$

$x_- = -1.00$

3. $3 \times 5x + 2y = 22$ ①

$2 \times 4x + 3y = 19$ ②

$15x + 6y = 66$ - ③

$8x + 6y = 38$ ④

$7x = 28$

$x = \frac{28}{7}$

$x = 4$

$5(4) + 2y = 22$

$20 + 2y = 22$

$2y = 22 - 20$

$2y = 2$

$y = \frac{2}{2}$

$y = 1$

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$$44) \quad x^8 \times x \times x^9 \\ = x^{18}$$

$$(i) \quad (2x^3)^3 \\ (2x^3)(2x^3)(2x^3) \\ 8x^{27}$$

$$(ii) \quad \underline{x^{12} \times x^5} \\ x$$

iv.

v.

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$$\begin{aligned} 5. \quad & 2(x^2 + y^2) + x^2(x - y) + 3xy - x^3 \\ & 2x^2 + 2y^2 + x^3 - x^2y + 3xy - x^3 \\ & 2x^2 + 2y^2 - x^2y + 3xy \end{aligned}$$

$$\begin{aligned} 6(i) \quad & 5(2x + 1) = 4(3x + 2) \\ & 10x + 5 = 12x + 8 \\ & 5 - 8 = 12x - 10x \\ & -3 = 2x \\ & x = \frac{-3}{2} \end{aligned}$$

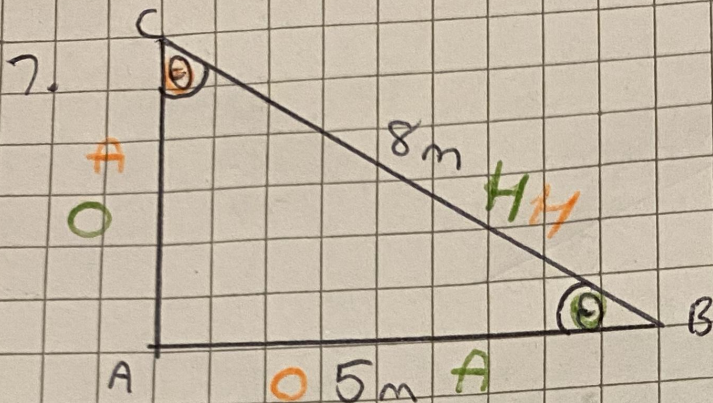
$$\begin{aligned} (ii) \quad & 12x + 5 = 4x - 1 \\ & 12x - 4x = -1 - 5 \\ & 8x = -6 \\ & x = \frac{-6}{8} \end{aligned}$$

$$\begin{aligned} (iii) \quad & \frac{(4x - 1)}{3} = \frac{(5x + 2)}{2} \\ & 2(4x - 1) = 3(5x + 2) \\ & 8x - 2 = 15x + 6 \\ & -2 - 6 = 15x - 8x \\ & -8 = 7x \\ & x = \frac{-8}{7} \end{aligned}$$

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$$\begin{aligned}
 \text{I} \quad \cos &= \frac{A}{H} \\
 \theta &= \cos^{-1} \left(\frac{A}{H} \right) \\
 \theta &= \cos^{-1} \left(\frac{5}{8} \right) \\
 \theta &= 51.32^\circ
 \end{aligned}$$

$$\begin{aligned}
 \text{II} \quad \sin &= \frac{O}{H} \\
 \theta &= \sin^{-1} \left(\frac{O}{H} \right) \\
 \theta &= \sin^{-1} \left(\frac{5}{8} \right) \\
 \theta &= 38.68^\circ
 \end{aligned}$$

$$\begin{aligned}
 \text{(III)} \quad \sin &= \frac{O}{H} \\
 \sin(38.68) \times 8 &= O = AC \\
 AC &= 5.00 \text{ X}
 \end{aligned}$$

$$\begin{aligned}
 \tan &= \frac{O}{A} \\
 \tan 51.32 \times 5 &= O = AC \\
 AC &= 6.25 \text{ m}
 \end{aligned}$$