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3.)

$$(iv) x^2 - 64 = 0 \Rightarrow x^2 - (8)^2 = 0 -$$

$$(x+8)(x-8) = 0$$

$$(x+8) = 0 \Rightarrow x = -8$$

$$(x-8) = 0 \Rightarrow x = 8$$

$$(v) \underset{x}{2x^2} + \underset{5}{9x} + 10 = 0 \Rightarrow (2x+5)(x+2) = 0$$

$$(2x+5) = 0 \Rightarrow 2x = -5$$

$$x = -\frac{5}{2}$$

$$(x+2) = 0 \Rightarrow x = -2$$

$$4.) \quad 14x^2 + 3x = 11 \Rightarrow 14x^2 + 3x - 11 = 0$$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \Rightarrow x = \frac{-3 \pm \sqrt{(3)^2 - 4(14)(-11)}}{2 \cdot 14}$$

$$x = \frac{-3 \pm \sqrt{9 + 616}}{28} = \frac{-3 \pm \sqrt{625}}{28}$$

$$x = \frac{-3 + 25}{28} = \frac{22}{28} = \frac{11}{14} //$$

$$x = \frac{-3 - 25}{28} = \frac{-28}{28} = -1 //$$

$$5-) \quad 5x + 3y = 39 \quad (2)$$

$$10x + 6y = 78$$

$$8x - 2y = 42 \quad (3)$$

$$28x - 6y = 126$$

$$34x = 204$$

$$x = 6 //$$

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8.)

$$(i) \sqrt[3]{x} = \sqrt[3]{x^1} = x^{1/3}$$

$$(ii) \cdot 1 = x^0$$

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1.) (i) $x^4 \times x^6 \times x = x^{4+6+1} = x^{11}$

(ii) $2x^2 \times 3x^3 \times 2x = 12x^{2+3+1} = 12x^6$

(iii) $\frac{x^4 \times x^3 \times x^2}{x^9} = \frac{x^{4+3+2}}{x^9} = \frac{x^9}{x^9} = 1$

(iv) $(3x^2)^3 = (3^3)(x^{2 \times 3}) = 27x^6$

(v) $\sqrt{x} \times \sqrt{x} = x^{1/2} \times x^{1/2} = x^{1/2+1/2} = x^1 = x$

2. (i) $15x - 2 = 12x + 9$

$15x - 12x = 9 + 2 \Rightarrow 3x = 11 \Rightarrow x = \frac{11}{3}$

(ii) $3(7x - 1) = 6(x + 3)$

$21x - 3 = 6x + 18 \Rightarrow 21x - 6x = 18 + 3$

$\Rightarrow 15x = 21$

$x = \frac{21}{15}$

(iii) $\frac{5x+3}{4} = \frac{2x-1}{9} \Rightarrow (5x+3) \cdot 9 = (2x-1)4$

$45x + 27 = 8x - 4 \Rightarrow 45x - 8x = -4 - 27 \Rightarrow 37x = -31$

$x = \frac{-31}{37}$

3. (i) $x^2 + 10x + 21 = 0 \Rightarrow (x+7)(x+3) = 0$

$\begin{array}{cc} x & 7 \\ x & 3 \end{array}$

$x+7=0 \quad x+3=0$

$\underline{x=-7} \quad \underline{x=-3}$

(ii) $x^2 - 3x + 2 = 0$

$\begin{array}{cc} x & -2 \\ x & -1 \end{array}$

$(x-2)(x-1)=0 \Rightarrow (x-2)=0 \Rightarrow x=2$

$(x-1)=0 \Rightarrow x=1$

(iii) $x^2 + 12x + 20 = 0 \Rightarrow (x+10)=0 \quad x=-10$

$\begin{array}{cc} x & 10 \\ x & 2 \end{array}$

$(x+2)=0 \quad x=-2$

$(x+10)(x+2)$

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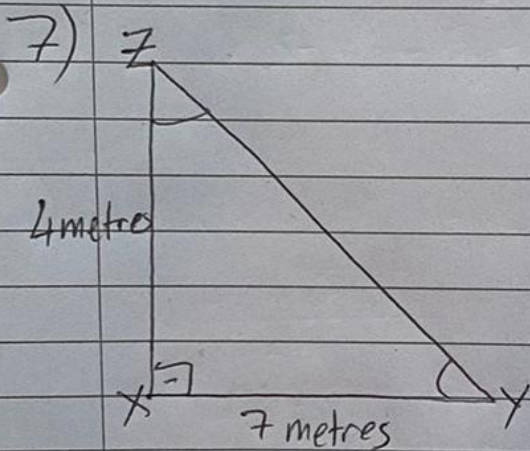
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$$6) \quad 5(2x^2 - y^2) - x^2(x^2 - y) - x^2y - x^4$$

$$10x^2 - 5y^2 - x^4 + x^3y - x^3y - x^4$$

$$~~10x^2 - 5y^2 - x^4~~ = 10x^2 - 2x^4 - 5y^2$$

$$= 2x^2(5 - x^2) - 5y^2$$

(i) Angle $y =$

$$\tan y = \frac{4}{7} \Rightarrow y = 29,74$$

$$\text{Angle } y = 29,74$$

(ii) Angle $Z =$

$$\text{Angle } Z + \text{Angle } Y = 90$$

$$\text{Angle } Z = 90 - \text{Angle } Y \Rightarrow 90 - 29,74 = 60,26 //$$

$$(iii) (YZ)^2 = (XZ)^2 + (XY)^2$$

$$(YZ)^2 = (4)^2 + (7)^2 \Rightarrow (YZ)^2 = 16 + 49$$

$$(YZ) = 65$$

$$YZ = 8,06 //$$