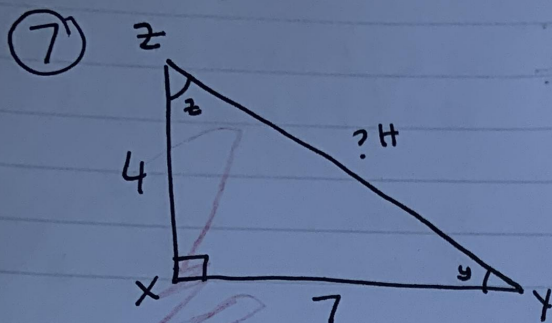




(i) Angle Y

(ii) Angle Z

(iii) $|YZ|^2$?

(i) Angle Y

$$\tan y = \frac{4}{7}$$

$$\tan y = 0,5714$$

$$\tan y = 0,5714 = y$$

$$29.74 = y^\circ$$

(ii) Angle Z

$$90 + 29.74 + z = 180$$

$$119.74 + z = 180$$

$$z = 180 - 119.74$$

$$\text{Angle } z = 60.26$$

$$\tan z = \frac{7}{4}$$

$$\tan^{-1} 1.75 = z$$

(iii) $|YZ|^2$?

$$|YZ|^2 = 4^2 + 7^2$$

$$|YZ|^2 = 16 + 49$$

$$|YZ|^2 = 65$$

$$|YZ| = 8.062$$

$$\tan^{-1} z = 60.26$$

(8) (i) $\sqrt[3]{x}$

$$\text{if } x = 27$$

$$x^3 = 3^3$$

$$\sqrt[3]{3^3}$$

$$x = 3$$

(ii) 1

$$\text{if } x = 1$$

$$x^0 = 1$$

$$x^0 = 1$$

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$$\textcircled{1} \text{ (i) } x^4 \cdot x \cdot x^6 \cdot x \cdot x$$

$$x^{4+6+1}$$

$$x^{11}$$

$$\text{(ii) } 2x^2 \cdot 3x^3 \cdot 2x$$

$$2 \cdot 3 \cdot 2 \cdot x^{2+3+1}$$

$$12x^6$$

$$\text{(iii) } \frac{x^4 \cdot x^3 \cdot x^2}{x^9}$$

$$\frac{x^{4+3+2}}{x^9}$$

$$\frac{x^9}{x^9} = 1$$

$$\text{(iv) } (3x^2)^3$$

$$3x^2 \cdot 3x^2 \cdot 3x^2$$

$$27x^6$$

$$\text{(v) } \sqrt{x} \cdot \sqrt{x}$$

$$= x$$

$$\textcircled{2} \text{ (i) } 15x - 2 = 12x + 9$$

$$15x - 12x = 9 + 2$$

$$\frac{3x}{3} = \frac{11}{3}$$

$$x = \frac{11}{3}$$

$$\text{(ii) } 3(7x - 1) = 6(x + 3)$$

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

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

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

$$x = \frac{2x^3}{15^3} = x^2 \frac{7}{5}$$

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

$$9 \cdot (5x+3) = 4 \cdot (2x-1)$$

$$45x + 27 = 8x - 4$$

$$45x - 8x = -4 - 27$$

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

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

③

$$(i) \quad x^2 + 10x + 21 = 0$$

$$(x+7)(x+3) = 0$$

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

$$x=-7 \quad x=-3$$

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

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

$$x-2=0 \quad x-1=0$$

$$x=2 \quad x=1$$

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

$$(x+10)(x+2) = 0$$

$$x+10=0 \quad x+2=0$$

$$x=-10 \quad x=-2$$

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

$$x^2 - 8^2 = 0$$

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

$$x-8=0 \quad x+8=0$$

$$x=+8 \quad x=-8$$

$$(v) \quad 2x^2 + 9x + 10 = 0$$

$$\begin{array}{r} 2x^2 + 9x + 10 = 0 \\ 2x^2 + 5x + 4x + 10 = 0 \\ 2x^2 + 5x + 2(x+2) + 10 = 0 \\ 2x^2 + 5x + 2x + 4 + 2x + 4 = 0 \\ 4x^2 + 9x + 8 = 0 \end{array}$$

$$(2x+5)(x+2) = 0$$

$$2x+5=0 \quad x+2=0$$

$$2x=-5 \quad x=-2$$

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

④ $14x^2 + 3x = 11$

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

$$14x^2 + 3x - 11 = 0$$

a b c

a = 14

b = 3

c = -11

$$\frac{-3 \pm \sqrt{3^2 - 4(14)(-11)}}{2 \cdot 14} = 0$$

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

$$\frac{-3 \pm \sqrt{625}}{28} = \frac{-3 \pm 25}{28} = x$$

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

$$\frac{11}{14} = x$$

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

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

$$x = -1$$

⑤ $5x + 3y = 39 \quad \text{---} \times 2$
 $8x - 2y = 42 \quad \text{---} \times 3$

$$\begin{array}{r} 10x + 6y = 78 \\ + 24x - 6y = 126 \\ \hline \end{array}$$

$$\frac{34x}{34} = \frac{204}{34}$$

x = 6

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

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

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

$$5(2x^2 - y^2) - 2x^4$$

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