

1)

(i) $x^6 \times x^8 \times x^2 \times x = x^{17}$

(ii) $(2x^2)^4 \times 3x^3$
 $16x^8 \times 3x^3$
 $48x^{11}$

(iii) $\frac{x^2 \times x^{10} \times x}{x^3}$

$\frac{x^{13}}{x^3}$
 x^{10}

(iv)

$2\sqrt{x} \times 3\sqrt{x}$

(v)

(v) x

2) ~~$7x-1 = 5x+4$~~ (i) $7x-1 = 5x+4$
 ~~$-5x+7x = 4+1$~~ $7x-5x = 4+1$
 ~~$2x = 5$~~ $2x = 5$
 ~~$x = 1.5$~~ $x = 2.5$

(ii) $10(3x+2) = 7(-2x-1)$
 $30x+20 = -14x-7$
 $30x+14x = -20-7$
 $44x = -27$
 $44/42.7 \quad x = -1.62$

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

$3(x-1) = 4(2x+1)$

$3x-3 = 8x+4$

$3x-8x = 4+3$

$-5x = 7$

$x = -7/5$

(iv)

3
 (i) $x^2 + 9x + 14 = 0$ 1, 14

$(x+7)(x+2) = 0$

$x+7=0$ $x+2=0$

$x=-7$ $x=-2$

(ii) $x^2 - 7x + 10 = 0$

~~$(x-2)(x-5) = 0$~~

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

$x-2=0$ $x-5=0$

$x=2$ $x=5$

(iii) $x^2 + 8x - 20 = 0$

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

~~$x+10=0$~~ $x-2=0$

$x=-10$ $x=2$

(iv) $x^2 - 49 = 0$
 $x^2 = 49$

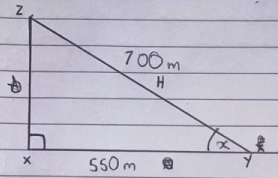
(v) $2x^2 - 3x - 20 = 0$
 $(2x+5)(x-4) = 0$
 $2x+5=0 \quad x-4=0$
 $x=-2.5 \quad x=4$

4) $17x^2 = -5x + 14$ $x = \frac{-5 \pm \sqrt{25 + 952}}{34}$
 $17x^2 + 5x - 14 = 0$
 $x = \frac{-5 \pm \sqrt{69 - 4(17)(-14)}}{2 \times 17}$ $\frac{-5 \pm \sqrt{977}}{34}$
 $\frac{-5 - \sqrt{977}}{34} = x = -1.06$ $\frac{-5 + \sqrt{977}}{34} = x = 0.77$

5) $6x + 5y = 35$ (1)
 $7x - 4y = 31$ (2)

6) i) $10p^3q^2 - 5p^2q + 15p^4q$
 $5p^2q(2pq - 1 + 3p^2)$

(ii) $2x^2y - 4xy^2$
 $2xy(x - 2y)$



SHC_HTA

(i) $700^2 = 550^2 + x^2$
 $490000 = 302500 + x^2$

$x = \sqrt{700^2 - 550^2} = 433$

height = 433m

ii 36.21°