

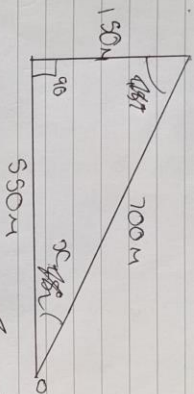
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7.



(i) $700m - 550m = 150m$
 $700^2 - 550^2 = 187,500$
 $\sqrt{187,500} = 433m$

(ii)

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2. Solve the following linear equations for x .

(i) $7x - 1 = 5x + 4$

$7x - 5x = 1 + 4$
 $2x = 5$
 $x = 2.5$

(ii) $10(3x + 2) = 7(2x - 1)$
 $30x + 20 = 14x - 7$
 $30x + 20 = -14x - 7$

$30x + 14x = -20 - 7$
 $44x = -27$
 $x = 0.6$

(iii) $\frac{3}{(2x+1)} = \frac{4}{(x-1)}$
 $8x + 4 = 3x - 3$

$8x - 3x = -4 - 3$
 $5x = -7$
 $x = -1.4$

(iv) $(x+2)^2 = (x+3)(x+5)$
 $(x+2)(x+2) = (x+3)(x+5)$
 $x^2 + 2x + 2x + 4 = x^2 + 5x + 3x + 15$
 $x^2 + 4x + 4 = x^2 + 8x + 15$

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ACHA 30001. Express the following as x to a power:

$$(i) x^6 \times x^8 \times x^2 \times x$$

$$6+8+2+1=17$$

$$= x^{17}$$

$$(ii) (2x^2)^4 \times 3x^3$$

$$16x^8 \times 3x^3 = 48x^{11}$$

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

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

$$(iv) 2\sqrt{x} \times 3\sqrt{x}$$

$$1 \times 3 = 6$$

$$x \times x = x^2$$

$$= 6x^2$$

$$(v) \frac{1}{x} = x^{-1}$$

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3. Solve the following quadratic equations by using the factorisation method.

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

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

$$7 \times 2 = 14$$

$$7+2=9$$

$$x+7=0 \quad x+2=0$$

$$x=-7 \quad x=-2$$

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

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

$$5 \times 2 = 10$$

$$-5-2=-7$$

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

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

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

$$x^2 + 8x - 20 = 0$$

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

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

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

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

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

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

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

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3)
(v) $2x^2 - 3x - 20 = 0$

$4x - 3 = -20$
 $4x = -17$
 $x = -4.25$

4) Use the quadratic formula to find the roots to the following quadratic equation

$17x^2 = -5x + 14$

$$\frac{-5x \pm \sqrt{5^2 - 4(17 \times 14)}}{17 \times 2}$$

$$\frac{-5 \pm \sqrt{-25 - 952}}{34}$$

$$\frac{-25 - 952}{34} = -97.7$$

$$\frac{-5 \pm \sqrt{-25 - 952}}{34}$$

5) Solve the following Simultaneous Equations:

$6x + 5y = 35$ ① $\times 4$ $6x + 5y = 35$
 $7x - 4y = 31$ ② $\times 5$ $35x - 20y = 155$

$24x + 20y = 140$ ③
 $35x - 20y = 155$ ④
 $59x = 295$
 $x = 5$

$5 \div 5 = 1$
 $y = 1$