



இயல் 7.3 - இயற்கணிதம்

பயிற்சி எண் :: 7.3.5.1.H

இயற்கணிதம் - முற்றொருமைகள் பயிற்சி

Algebra - Identities - Exercises

இயற்கணிதம் (Algebra) - முற்றொருமைகள் - பயிற்சி

தகுந்த முற்றொருமையைப் பயன்படுத்தி மதிப்பைக் காண்க.

i) $(9x - 5x)^2$



$$(a - b)^2 = a^2 - 2ab + b^2$$

$$\begin{aligned}(9x - 5x)^2 &= \underbrace{(9x)^2} - \underbrace{(2 \times 9x \times 5x)} + \underbrace{(5x)^2} \\ &= 81x^2 - 90x^2 + 25x^2 \\ &= 16x^2\end{aligned}$$

$$(9x - 5x)^2 = 16x^2$$

ii) 56^2



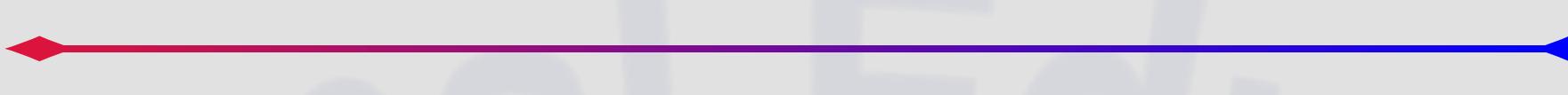
$$56^2 = (50 + 6)^2$$

$$(a + b)^2 = a^2 + 2ab + b^2$$

$$\begin{aligned}(50 + 6)^2 &= \underbrace{50^2} + \underbrace{(2 \times 50 \times 6)} + \underbrace{6^2} \\ &= 2500 + 600 + 36 \\ &= 3,136\end{aligned}$$

$$56^2 = 3,136$$

iii) $(p + 10) \times (p + 20)$



$$(x + a) \times (x + b) = x^2 + x(a + b) + ab$$

$$\begin{aligned}(p + 10) \times (p + 20) &= \underbrace{p^2} + \underbrace{p \times (10 + 20)} + \underbrace{(10 \times 20)} \\ &= p^2 + 30p + 200\end{aligned}$$

$$(p + 10) \times (p + 20) = p^2 + 30p + 200$$

iv) 23×17



$$23 \times 17 = (20 + 3) \times (20 - 3)$$

$$(a + b) \times (a - b) = a^2 - b^2$$

$$\begin{aligned}(20 + 3) \times (20 - 3) &= 20^2 - 3^2 \\ &= 400 - 9 = 391\end{aligned}$$

$$23 \times 17 = 391$$

v) $(8y^2 + 2y)^2$

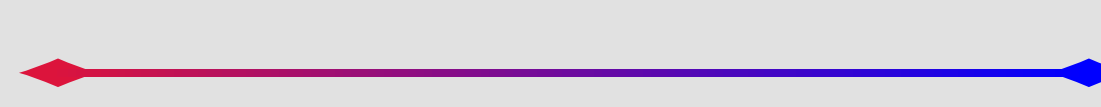


$$(a + b)^2 = a^2 + 2ab + b^2$$

$$\begin{aligned}(8y^2 + 2y)^2 &= \underbrace{(8y^2)^2} + \underbrace{(2 \times 8y^2 \times 2y)} + \underbrace{(2y)^2} \\ &= 64y^4 + 32y^3 + 4y^2\end{aligned}$$

$$(8y^2 + 2y)^2 = 64y^4 + 32y^3 + 4y^2$$

vi) 95^2



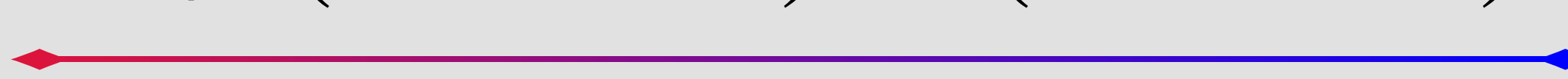
$$95^2 = (100 - 5)^2$$

$$(a - b)^2 = a^2 - 2ab + b^2$$

$$\begin{aligned}(100 - 5)^2 &= \underbrace{(100)^2} - \underbrace{(2 \times 100 \times 5)} + \underbrace{(5)^2} \\ &= 10,000 - 1000 + 25 \\ &= 9,025\end{aligned}$$

$$95^2 = 9,025$$

vii) $(7k + 4k) \times (7k - 4k)$



$$(a + b) \times (a - b) = a^2 - b^2$$

$$\begin{aligned}(7k + 4k) \times (7k - 4k) &= (7k)^2 - (4k)^2 \\ &= 49k^2 - 16k^2 = 33k^2\end{aligned}$$

$$(7k + 4k) \times (7k - 4k) = 33k^2$$

இதன் காரணாளியின் YouTube இணையதள இணைப்பு (YouTube URL)

<https://youtu.be/JDhh07jLYAo>

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