

Remarkable Identities

Square the following binomials.

a) $(x+5)(x+5)$

b) $(2n-3)^2$

c) $(p+9)^2$

The result of squaring a binomial is called a
perfect square trinomial.

$$\begin{aligned}(a+b)^2 &= (a+b)(a+b) \\ &= a^2 + ab + ab + b^2 \\ &= a^2 + 2ab + b^2\end{aligned}$$

Similarly... $(a-b)^2 = (a-b)(a-b)$

$$\begin{aligned}&= a^2 - ab - ab + b^2 \\ &= a^2 - 2ab + b^2\end{aligned}$$

Use this identity to quickly square these binomials.

a) $(3x - 7)^2$

b) $(6x + 5)^2$

c) $(12x^4 - y)^2$

d) $(43)^2$

Multiply the following binomials.

a) $(x - 3)(x + 3)$

b) $(2n + 5)(2n - 5)$

c) $(7x + 8)(7x - 8)$

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

these binomials are
called conjugates

The product of two binomial conjugates is called a
difference of squares.

Use this identity to quickly multiply these conjugates.

a) $(x-13)(x+13)$

b) $(5x+12)(5x-12)$

c) $(10x+15)(10x-15)$

d) $(2x^3+9)(2x^3-9)$

e) 102×98