

New Vocabulary:

Square of binomials	$(a+b)^2 : (a+b)(a+b) = a^2 + b^2 + a^2 + ab$ $(a-b)^2 : (a-b)(a-b) = a^2 - ab - ba + b^2 = a^2 + b^2 - 2ab$
Difference of two squares	$(a-b)(a+b) : a^2 + ab - ba - b^2 = a^2 - b^2$

Find Product and write in Standard form:

a. $(x+3)^2$
 $a^2 + b^2 + 2ab$
 $x^2 + 3^2 + 2 \cdot x \cdot 3$
 $x^2 + 9 + 6x \rightarrow \boxed{x^2 + 6x + 9}$

b. $(5x+7)(5x-7)$
 $(a-b)(a+b) = a^2 - b^2$
 $(5x)^2 - 7^2$
 $= \boxed{25x^2 - 49}$

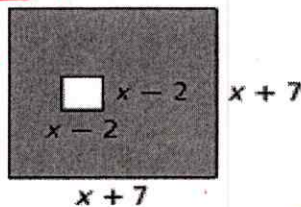
Try it.....

a. $(x-5)^2$
 $x^2 + 25 - 10x$
 $= \boxed{x^2 - 10x + 25}$

b. $(x^2 - 2y)(x^2 + 2y)$
 $(x^2)^2 - (2y)^2$
 $= \boxed{x^4 - 4y^2}$

A hole is punched in a piece of metal to make a part for a machine. What is the area of the metal part, or the shaded region shown?

Area = length x width.



Area of Outer square = $(x+7)(x+7)$
 $= x^2 + 7^2 + 2 \cdot x \cdot 7$
 $= x^2 + 49 + 14x = \underline{x^2 + 14x + 49}$

Area of Inner square = $(x-2)(x-2)$
 $= x^2 + 4 - 2x \cdot 2 = \underline{x^2 - 4x + 4}$

Area of shaded region = Area of Outer square - Area of Inner square
 $= \boxed{18x + 45 \text{ sq. unit}} = (x^2 + 14x + 49) - (x^2 - 4x + 4)$