Remember:

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

and

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

Today we're starting with trinomials that fit the Perfect Square Trinomial pattern, and factoring them into a binomial squared.

$$x^2 - 10x + 25 = (x - 5)^2$$

Consider the following trinomials

$x^2 + 6x + 9$

$x \cdot x \qquad 3 \cdot 3$

$2(x \cdot 3) = 6x$

This is a P☐T

$x^2 + 10x + 9$

$x \cdot x \qquad 3 \cdot 3$

$2(x \cdot 3) \neq 10x$

This is NOT a P☐T!

If it fits the P☐T pattern, then use the two factors to write a square binomial $(x + 3)^2$

thinking color

answer color

Try these:

$x^2 + 8x + 16$ P☐T $(x+4)^2$

$a^2 = x^2$

$a = x$

$b^2 = 16$

$b = 4$

$2ab = 8x$

$n^2 - 16n + 64$ P☐T $(n-8)^2$

$a^2 = n^2$

$a = n$

$b^2 = 64$

$b = 8$

$2ab = 16n$

$9g^2 - 12g + 4$ P☐T $(3g-2)^2$

$a^2 = 9g^2$

$a = 3g$

$b^2 = 4$

$b = 2$

$2ab = 12g$

$4t^2 + 36t + 81$ P☐T $(2t+9)^2$

$a^2 = 4t^2$

$a = 2t$

$b^2 = 81$

$b = 9$

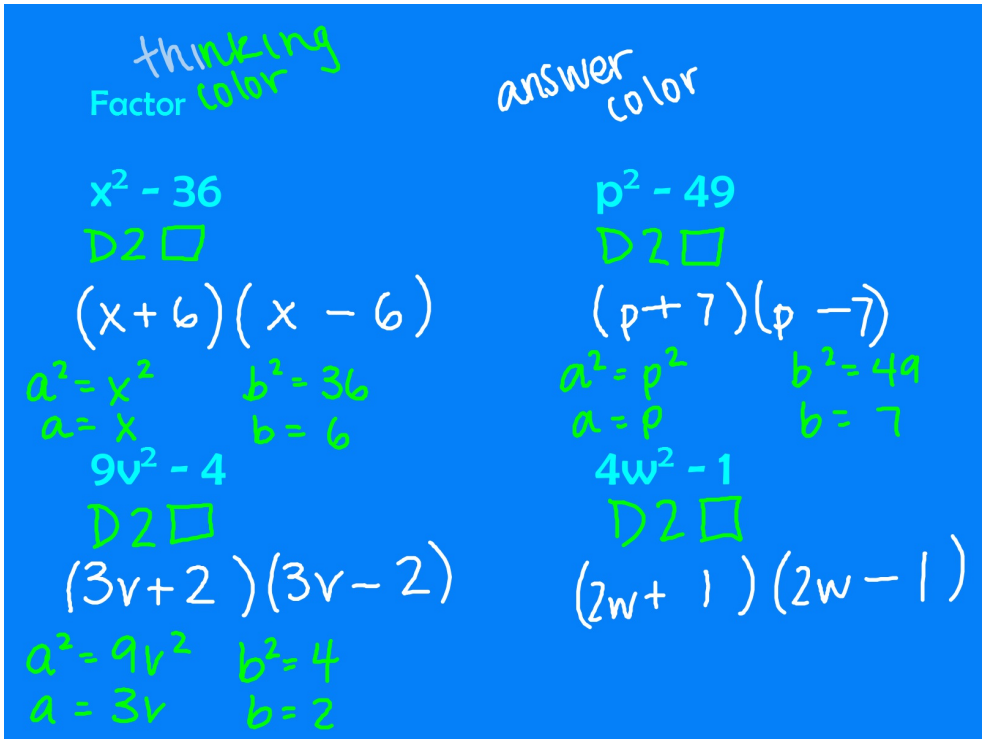
$2ab = 36t$

In 9.4 we talked about the only time that two binomials would ever multiply to make a binomial. Who remembers what's special about this case?

The Difference of Two Squares:

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

This is pure memorization!! Anytime there are only 2 terms, check to see if they're both perfect squares!!



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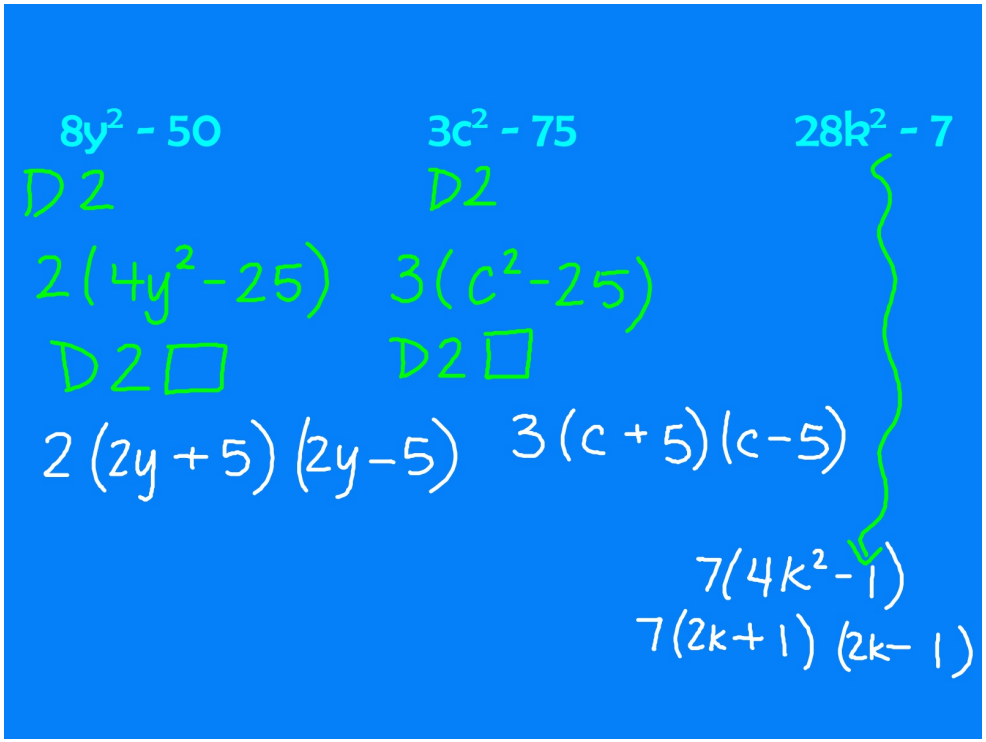

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SHORTCUTS ONLY!!!!

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