12.7

COMPLETING THE SQUARE REVIEW

Hmmm.....

1) $(x+5)^2$

2) $(a-9)^2$

3) $(2a+3)^2$

4) $(4s-5t)^2$

Formula (Pattern)

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

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

Factoring Perfect Squares

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

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

1) Is the first term a square?
2) Is the last term a square?
3) Is the middle term (ignore sign) twice the product of the roots of the first and last terms

5) $x^2 - 4x + 4$

Factoring Perfect Squares

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

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

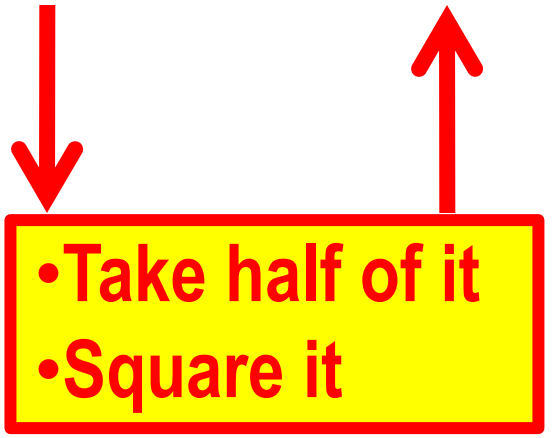
1) Is the first term a square?
2) Is the last term a square?
3) Is the middle term (ignore sign) twice the product of the roots of the first and last terms

6) $p^2 - 14p + 49$

Review – Perfect Squares

Example 1

$$(x+3)^2 = x^2 + 6x + 9$$



Review – Perfect Squares

Example 2

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

- Take half of it
- Square it

Review – Perfect Squares

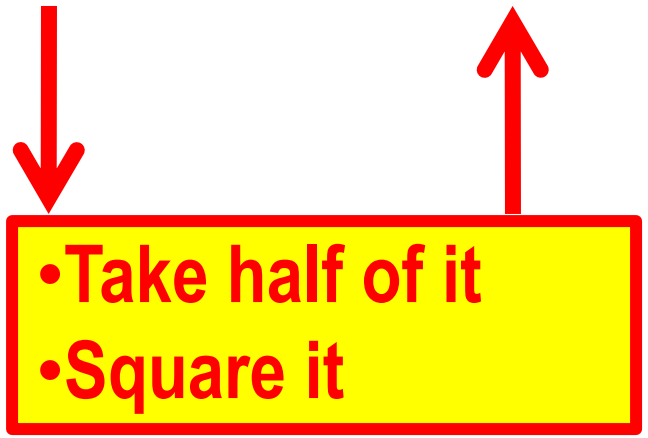
Example 3

$$(x-8)^2 = x^2 - 16x + 64$$

- Take half of it
- Square it

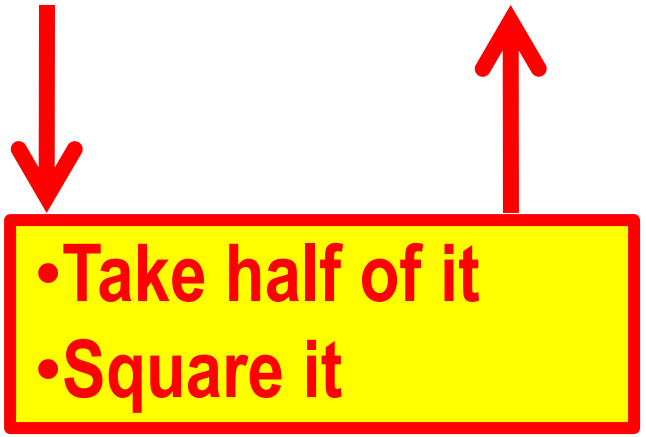
Completing the Square

$$x^2 - 20x + \_\_\_\_$$



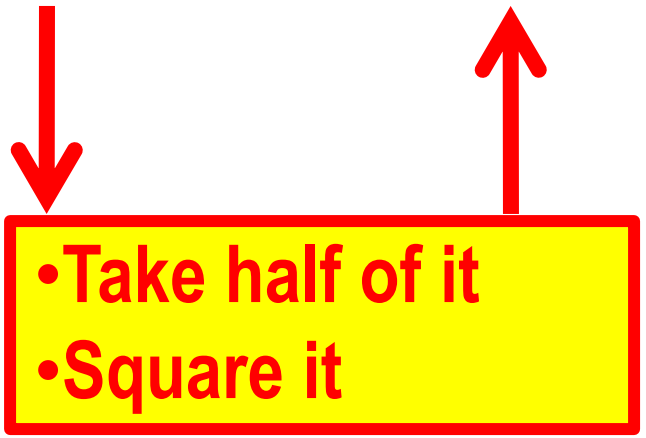
Completing the Square

$$x^2 + 11x + \_\_\_\_$$



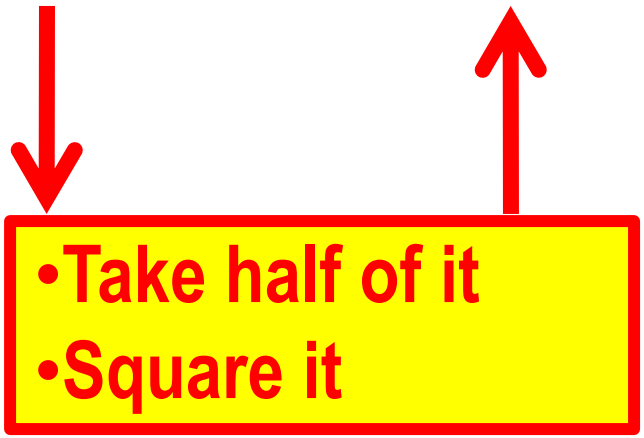
Completing the Square

$$x^2 + 14x + \_\_\_\_$$



Completing the Square

$$x^2 - 9x + \_\_\_\_$$



REVIEW: COMPLETING THE SQUARE

Complete the square, and then factor it.

1) $x^2 + 10x$ _____ $=$

2) $a^2 - 6a$ _____ $=$

3) $m^2 - 14m$ _____ $=$

Solving by completing the square

Complete the square, and then factor it.

4) $y^2 - 24y + 23 = 0$

Solving by completing the square

Complete the square, and then factor it.

5) $x^2 + 6x + 7 = 0$

REVIEW: COMPLETING THE SQUARE

Complete the square, and then factor it. Don't try to solve.

6) $n^2 - 12n + 35 = 0$

REVIEW: COMPLETING THE SQUARE

Complete the square, and then factor it. Don't try to solve.

7) $k^2 - 2k - 35 = 0$

COMPLETING THE SQUARE

1) Gather like terms
2) Complete the square, and then factor it. Don't try to solve.

8) $x^2 + y^2 - 4x + 2y = 20$

COMPLETING THE SQUARE

1) Gather like terms
2) Complete the square, and then factor it. Don't try to solve.

9) $x^2 + y^2 + 2x - 4y - 11 = 0$