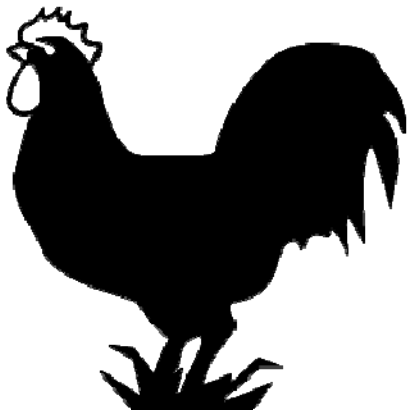
Name _____ Date _____

Completing the Square in a Quadratic Expression - Step-by-Step Lesson

Complete the square. Fill in the number that makes the polynomial a perfect-square quadratic.

$x^2 - 8x +$ _____



Explanation:

We start with the equation:

$x^2 - 8x +$ _____

We are missing the whole number portion of the quadratic.

With quadratic expressions like $x^2 + bx$, we can complete the square by adding $(\frac{b}{2})^2$

add $(\frac{b}{2})^2$ to complete the square.

$x^2 - 8x + (\frac{b}{2})^2$

$= x^2 - 8x + (\frac{-8}{2})^2$

$= x^2 - 8x + (-4)^2$

$= x^2 - 8x + 16$

The number needed to complete the square is 16.

This quadratic can be written as a square, $(q - 4)^2$, so it is a perfect square quadratic.