

Name: _____

Date: _____

Learning Goal 3.3

Convert standard form of the quadratic equation to vertex form by completing the square.

Standard Form

→

Vertex Form

Results in just one extra step:

Example: $f(x) = 5x^2 + 30x + 41$

0. Factor.

1. Group and Complete the Square:

2. Add in the rest of the equation:

3. Isolate the Perfect Square Trinomial:

4. Simplify

$$a \neq 1$$

Example Convert the following quadratic equations to vertex form.

a. $f(x) = 3x^2 - 12x - 9$
0.

1.

2.

3.

4.

b. $g(x) = -5x^2 - 70x + 24$
0.

1.

2.

3.

4.

c. $h(x) = 2x^2 - 20x$
0.

1.

2.

3.

4.

d. $y = -3x^2 - 18x - 24$
0.

1.

2.

3.

4.