Unit 8, Lesson 14

Rewriting Quadratic Expressions

Let's practice rewriting quadratic expressions.

14.1 Writing Quadratics in Standard Form

Use the given information to write a quadratic expression in standard form.

- $a = k^2$
- $b = 2k \cdot m$
- $c = m^2$

1. $k = 1, m = 3$

2. $k = 2, m = 3$

3. $k = 2, m = 4$

4. $k = 3, m = 5$

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14.2 Practice Writing Expressions in Standard Form

In their math class, Priya and Tyler are asked to rewrite $(5x + 2)(x - 3)$ into standard form.

Priya likes to use diagrams to organize her thinking when using the distributive property to rewrite expressions like these, so her work looks like this.

	x	-3
$5x$	$5x^2$	$-15x$
2	$2x$	-6

$5x^2 - 15x + 2x - 6$

$5x^2 - 13x - 6$

Tyler likes to use expressions to organize his thinking when using the distributive property to rewrite expressions like these, so his work looks like this.

$5x(x - 3) + 2(x - 3)$

$5x^2 - 15x + 2x - 6$

$5x^2 - 13x - 6$

Use either of these methods or another method you prefer to rewrite these expressions into standard form.

1. $(2x + 1)(2x - 3)$

2. $(4x - 1)(\frac{1}{2}x - 3)$

3. $(3x - 5)^2$

4. $(2x + 1)^2$

14.3 Find the Values

For each question, find the value of k and m then find the value of m^2.

1.
   - $k > 0$
   - $k^2 = 100$
   - $2km = 40$

2.
   - $k < 0$
   - $k^2 = 9$
   - $2km = 30$

3.
   - $k < 0$
   - $k^2 = 16$
   - $2km = -40$

4.
   - $k > 0$
   - $k^2 = 4$
   - $2km = -28$

5.
   - $k > 0$
   - $k^2 = 49$
   - $2km = 14$

6.
   - $k > 0$
   - $k^2 = 0.25$
   - $2km = 12$