Name _____ Date _____ Class _____

LESSON 20-3

Applying the Zero Product Property to Solve Equations

Reteach

Quadratic equations in factored form can be solved by using the Zero Product Property.

If the product of two quantities equals zero, at least one of the quantities must equal zero.

If $(x)(y) = 0$, then $x = 0$ or $y = 0$

If $(x + 3)(x - 2) = 0$, then $x + 3 = 0$ or $x - 2 = 0$

You can use the Zero Product Property to solve any quadratic equation written in factored form, such as $(a + b)(a - b) = 0$.

Examples

Find the zeros of $(x + 5)(x - 1) = 0$.

$x + 5 = 0$ or $x - 1 = 0$ *Set each factor equal to 0.*

$x = -5$ or $x = 1$ *Solve each equation for x.*

Solve $(x - 7)(x + 2) = 0$.

$x - 7 = 0$ or $x + 2 = 0$ *Set each factor equal to 0.*

$x = 7$ or $x = -2$ *Solve each equation for x.*

Use the Zero Product Property to solve each equation by filling in the blanks below. Then find the solutions. Check your answer.

1. $(x - 6)(x - 3) = 0$

   $x =$ _____ or $x =$ _____

   _____

2. $(x + 8)(x - 5) = 0$

   $x =$ _____ or $x =$ _____

   _____

Use the Zero Product Property to solve each equation.

3. $(y - 7)(y - 3) = 0$

   _____

4. $0 = (x + 6)(x - 3)$

   _____

5. $(x + 4)(x + 3) = 0$

   _____

6. $(t + 9)(t - 3) = 0$

   _____

7. $(n - 5)(n + 3) = 0$

   _____

8. $(a - 10)(a + 3) = 0$

   _____

9. $(z - 6)(z + 4) = 0$

   _____

10. $0 = (x + 4)(x - 2)$

    _____

11. $0 = (g + 3)(g - 3)$

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