

1. Write a quadratic equation for the parabola that has intercepts at (-3, 0) and (1, 0) and passes through the point (0, -6).

a. $f(x) = (x - 3)(x + 1)$
 b. $f(x) = 2(x + 3)(x - 1)$
 c. $f(x) = 2(x - 3)(x + 1)$
 d. $f(x) = (x + 3)(x - 1)$

3. Use the information to write an equation. Vertex (5, -8), y-intercept: 7.

a. $f(x) = (x + 5)^2 + 8$
 b. $f(x) = -\frac{2}{3}(x + 5)^2 + 8$
 c. $f(x) = \frac{3}{5}(x - 5)^2 - 8$
 d. $f(x) = (x - 5)^2 - 8$

2. Write a quadratic equation for the parabola that has intercepts at (-10, 0) and (2, 0) and passes through the point (0, -60).

a. $f(x) = 3(x + 10)(x - 2)$
 b. $f(x) = 3(x - 10)(x + 2)$
 c. $f(x) = (x + 10)(x - 2)$
 d. $f(x) = (x - 10)(x - 2)$

4. Use the information provided to write an equation in vertex form. $y = x^2 - 10x + 18$

a. $f(x) = (x - 5)^2 - 7$
 b. $f(x) = (x + 5)^2 - 7$
 c. $f(x) = (x - 5)^2 + 7$
 d. $f(x) = (x + 5)^2 + 7$

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Homework ?'s

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Fold New Calendar Math

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5.2 Solving Quadratic Functions by Factoring (finding zeros) (A.SSE.3)

Finding zeros of the product property: When a function is in factored form, $f(x) = a(x - p)(x - q)$, the Zero Product Property can be used to find the zeros of the function.

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Example 1: Find the zeros for the function: $n^2 + 7n + 5 = -7$

Steps:

- one side of the equation zero
- Factor
 $a =$ $b =$ $c =$
- Set each part equal to zero

Solving:

$$n^2 + 7n + 12 = 0$$

$a=1$ $b=7$ $c=12$ 3×4

$$(n + 4)(n + 3) = 0$$

$n + 4 = 0$ $n + 3 = 0$
 $n = -4$ $n = -3$

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If the function is in Standard Form factor first, then solve to find the roots.

Example 2: Find the roots of the function: $v^2 + 35 = 12v$

roots are another word for solutions

$$v^2 + 35 = 12v$$

- one side zero
- Factor
- Set each part equal to zero

$$v^2 - 12v + 35 = 0$$

$a=1$ $b=-12$ $c=35$ 5×7

$$(v - 5)(v - 7) = 0$$

$v - 5 = 0$ $v - 7 = 0$
 $v = 5$ $v = 7$

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Example 3: Find the solutions for the function: $2n^2 - 9n + 15 = 5$

$$2n^2 - 9n + 15 = 5$$

$$2n^2 - 9n + 10 = 0$$

$a=2$ $b=-9$ $c=10$ ~~$+20$~~
 ~~-4~~ ~~-5~~
 ~~-9~~

$$\left(\frac{2n-4}{2}\right)\left(\frac{2n-5}{2}\right)$$

$$(n-2)(2n-5)$$

$$n-2=0 \quad 2n-5=0$$

$$\begin{matrix} +2 & +2 \\ \hline n=2 \end{matrix} \quad \begin{matrix} +5 & +5 \\ \hline 2n=5 \\ \frac{2n}{2} = \frac{5}{2} \\ n = \frac{5}{2} \\ 2.5 \end{matrix}$$

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EX. $3n^2 - 9n = 0$

1. GCF

$$3n(n-3) = 0$$

$$\cancel{3}n = 0 \quad n - \cancel{3} = 0$$

$$\frac{3}{3} \quad \frac{1}{1} \quad \frac{3}{3}$$

$$\boxed{n=0} \quad \boxed{n=3}$$

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5.2 Homework

1-24 evens

2, 4, 6, 8, ...

25-29

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⑥ $+v^2 + 4v + 4 = 4$

$$v^2 + 4v = 0$$

$$v(v+4) = 0$$

$$\boxed{v=0} \quad v+4=0$$

$$\begin{matrix} -4 & -4 \\ \hline v = -4 \end{matrix}$$

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