WARM UP

Find the solutions for each quadratic by factoring.

1. $f(x) = x^2 - 5x - 14$
2. $f(x) = 2x^2 + 16x$
3. $f(x) = x^2 - 16$
4. $f(x) = 4x^2 + 11x - 3$

Oct 27-1:32 PM

$7n^2 - 56n = -84$
$+84 \quad +84$
$7n^2 - 56n + 84 = 0$
$7(n^2 - 8n + 12) = 0$
$7(n-6)(n-2) = 0$
$n-6=0 \quad n-2=0$
$+6 \quad +6$
$n=6 \quad n=2$

$12 \quad -8$
$-6 \cdot -2$

Oct 29-9:34 AM

10-29-15

Solving Quadratics by Factoring & Graphing

Oct 27-1:24 PM

Find the x-intercepts for the following quadratic functions.

5. $f(x) = x^2 - 5x - 14$ $-2, 7$
$0 = (x-7)(x+2)$
$x-7=0 \quad x+2=0$
$x=7 \quad x=-2$

{x-intercepts, solutions, zeros, roots}

6. $f(x) = 2x^2 + 16x$
$0 = 2x(x+8)$
$2x=0 \quad x+8=0$
$x=0 \quad x=-8$
7. $f(x) = x^2 - 16$
8. $f(x) = 4x^2 + 11x - 3$

How to Find an x-intercept:

1. Press 2nd
2. Press TRACE
3. Select #2:zero
4. You should see "Left Bound?"
   Type in an x-value to the left of x-intOR
   Move cursor to the left of x-int and press ENTER
5. You should see "Right Bound?"
   Type in an x-value to the right of x-int OR
   Move cursor to the right of vertex and press ENTER
6. You should see "Guess?"
   Type in the x-value for x-int OR
   Move cursor to the x-int and press ENTER

Oct 27-1:38 PM

What do you notice about the last 2 sections?

Oct 27-1:46 PM

For any function, the __x__-values of the __quadratics__ are the same as the __x-intercepts__. There are 2 other names for the x-intercepts as well. They are __zeros__ and __roots__. So, zeros, roots, solutions and x-intercepts are the same thing! Factoring is just one way to solve a quadratic. You can also solve a quadratic by graphing it and finding the x-intercepts.

Oct 27-1:58 PM

Now, find the solutions for each quadratic by graphing.

9. $f(x)=2x^2-2x-40$ $x=-4, 5$

10. $f(x) = 3x^2-16x+5$

11. $f(x) = 2x^2+5x$

Oct 27-2:04 PM

Find the roots for the given factors.

1. (x-3)(x+2) $x-3=0$ $x=3$ $x+2=0$ $x=-2$
2. (2x-1)(x-7) $2x-1=0$ $x=1/2$ $x-7=0$ $x=7$

Find the zeros for the given factors.

3. x(x+6) $x=0$ $x+6=0$ $x=-6$
4. (3x+2)(3x-5)

Oct 27-2:05 PM

Write the factors for the given zeros.

5. 2, -5 $(x-2)(x+5)$
6. -1, -11 $(x+1)(x+11)$
7. $\frac{1}{2}$, -3 $(x-\frac{1}{2})(x+3)$ $(2x-1)(x+3)$
8. 7, 5 $(x-7)(x-5)$
9. $-\frac{5}{2}, \frac{3}{4}$ $(2x+5)(4x-3)$
10. 0, 10 $(x-0)(x-10)$ $x(x-10)$

Oct 27-2:07 PM

Write a quadratic function in standard form for each given set of roots.

11. -3, -4
$(x+3)(x+4)=0$
$x^2+4x+3x+12=0$
$x^2+7x+12=0$

12. $-\frac{1}{2}$, 5
$(2x+1)(x-5)=0$
$2x^2-10x+1x-5=0$
$2x^2-9x-5=0$

13. 0, 9

14. $-\frac{5}{3}, \frac{1}{4}$
$(3x-5)(4x-1)=0$
$12x^2-3x-20x+5=0$
$12x^2-23x+5=0$

Oct 27-2:11 PM

Finish the rest of the assignment...

Oct 27-2:14 PM

Oct 27-2:34 PM