For the last week we have been looking at

expanding expressions such as $(x + 5)(x - 2)$ and

factoring expressions such as $x^2 + 3x - 10$.

How can we turn these expressions into equations?

Mar 31-8:33 AM

Solving Quadratic Equations in Factored Form

March 31/2011

The expressions we have been looking at so far, $ax^2 + bx + c$ and $a(x - t)(x - s)$, are called quadratic expressions.

Now, we will make them equations,

by setting the expression equal to zero:

$ax^2 + bx + c = 0$ or $a(x - t)(x - s) = 0$

OR

by setting the expression equal to y (for graphing):

$y = ax^2 + bx + c$ or $y = a(x - t)(x - s)$

Mar 20 - 4:17 PM

Recall: To solve an equation, means to determine the value of the variable(s) that makes the expression on the left side (LS) equal to the expression on the right side (RS).

This value is called the solution or root of the equation.

In quadratics you can also be asked to find the zeros of the equation $y = ax^2 + bx + c$. In this case, set $y = 0$ and solve.

$3x = 15$

Mar 29-11:32 AM

Before we start let's practice ....

give me two numbers that have a product of zero:

$(1)(0) = 0$ $(0)(0) = 0$ $(100000)(0) = 0$

What do you notice?

any number $\times 0 = 0$

Mar 31-8:45 AM

Ex.1) Solve each of the following equations.

(a) $x(x - 10) = 0$

Zero multiplied by anything is zero.

If (a)(b) = 0 then
a = 0 or b = 0 (or both are zero).

$x = 0$ or $x - 10 = 0$
$+10 \quad +10$
$x = 10$

(b) $-2(x - 5)(3x - 1) = 0$

$x - 5 = 0$ or $3x - 1 = 0$
$x = 5$ $\quad \frac{3x}{3} = \frac{1}{3}$
$x = \frac{1}{3}$

$\therefore x = 5$ or $x = \frac{1}{3}$

(c) $2(x - 2)^2 = 0$

$2(x-2)(x-2) = 0$

$x - 2 = 0$ or $x - 2 = 0$
$x = 2$ $\quad x = 2$

$\therefore x = 2$

Apr 17-11:30 PM

Ex. 2) Determine the zeros

(a) $y = -(x - 2)(x - 8)$

(b) $y = (3 + x)(2 - x)$

for zeroes, set $y = 0$

$0 = -(x-2)(x-8)$

$x - 2 = 0$ or $x - 8 = 0$
$x = 2$ $\quad x = 8$

Apr 18-12:03 AM

Assigned Work:

p. 155-157 # 1i (for each of abc),
#4abc (find zeros only),
#17

17.

(a) $y = (2x-3)(x+4)$

$= 2x^2 + 5x - 12$

Apr 1-1:59 PM