Mr. Rogove

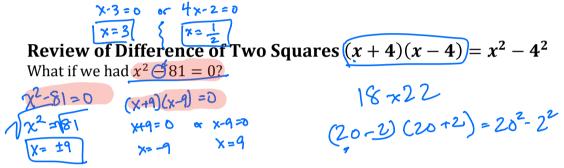
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LEARNING OBJECTIVE: We will solve equations involving factored expressions. (Alg1M1L12)

CONCEPT DEVELOPMENT:

Zero-Product Property: If ab = 0, then either a = 0 or b = 0 or a = b = 0Example: (x-3)(4x-2) = 0

If x-3 =0, what does (x-3) (4x =2) equal? 0 1 F 4x-2=0, what does (x-3) (4x =2) equal? 0 x-3=0 or 4x-2=0



$$(20-2)(20+2)=20^2-2^2$$

Factoring Review with linear factors:

$$(x+3)(3x+8) - (x+3)(3x)$$

 $(x+3)(3x+8-3x)$

w(w+5) + 2(w+5)	(3x-4)(x+9) + (3x-4)(2x-4)
(w+5) (w+2)	(3x-4) (x+9+2x-4)
	(3x-4)(3x+5)
(3x+6)(5-2x) + (x+2)(x-7)	$(4x+3)(x^2+x^3) - (2x-2)(x^2+x^3) $
(x+2) 3(5-2x)+ (x+2)(x-7)	(x2+x9 (4x+3-2x+2)
(x+2) (15-6x+x-7)	$(\chi^2 + \chi^5)$ $(2 \chi + 5)$
(X+2) (8-5x)	

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GUIDED PRACTICE: **Steps for Solving Equations Involving Factored Expressions**

- 1. If necessary, find a common factor.
- 2. Create two equations (if there are two factors), with each factor equal to 0.
- 3. Solve each equation to find your solution set. Write your answer in set notation.

(x-10)(x+3) = 0	(x-4)(x+3) = 0
x-10=0 or $x+3=0+10$ $+10$ -3 $-3x=10$ $x=-3$	$\begin{array}{ccc} x-4=0 & \text{or} & x+3=0 \\ x=4 & & x=-3 \end{array}$ $\left\{4,-3\right\}$
$\begin{cases} 10, -3 \end{cases}$ $2x^2 - 10x = 0$ $2 \times (x-5) = 0$	$6x^2 + 42x = 0$
$2x = 0 \qquad \text{or} \qquad x=5$ $x=0 \qquad \text{or} \qquad x=5$	
{0,5}	{o,-7}
x(x-5) + 4(x-5) = 0	x(5x - 20) + 2(5x - 20) = 0
(X-2)(X+4)=0	
{5,-4}	{4,-2}

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$$(x+3)(x-3) = 0$$

$$x+2=0$$
 $x-2=0$
 $x=2$ $x=2$

$$\frac{x^2 - 9 = 5(x - 3)}{(x+3)(x-3)} = 5(x-3)$$

$$x+3=5$$

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

$$\frac{(x+3)(x-3) = 5(x-3) = 0}{(x-3)(x-3)(x-3) = 0}$$

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

$$x^{2} - 4 = (x + 2)(x - 5)$$

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

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

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

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

$$\frac{(x+2)^{\frac{3}{3}}=0}{3}=0$$

$$x+2=0$$

$$x=-2$$

$$(3x-2)(x+12) = (3x-2)(2x-10)$$

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INDEPENDENT PRACTICE:

Will be Page s 98 from Alg 1 Mod 1 lesson 17...this is student problem set for lesson.

ACTIVATING PRIOR KNOWLEDGE:

We know how to calculate the difference of two squares using diagrams:

(x+y)(x-y)	(20+1)(20-1)

CLOSURE:

A string 60 inches long is to be laid out on a table top to make a rectangle of perimeter 60 inches. Write the width of the rectangle as 15 + x inches. What is the expression for its length? What is the expression for its area? What value of x gives an area of largest possible value. Describe the shape of the rectangle for this special value of x.

Notes:

This maps to lesson 17 from Alg 1, Mod 1. Should be good lead in for Mod 4 material on factoring...