

Factoring Quiz , Grab bubble sheet and get out scratch paper. Put name on back of bubble sheet.

Pass Back Unit 1 Test

2.1 Finding Zeros

Objective : Find zeros of a polynomial by factoring and graphing. Find a function given the zeros.

ZONK Activity

Homework finish 2.1 Worksheet

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Factoring HSA-APR.C.4

Factor each completely.

1) $15n^2 - 20n - 160$	2) $x^2 - 8x + 15$
A) $6(3n + 10)(n - 3)$	A) $(x - 5)(x - 3)$
B) $5(3n + 16)(n - 2)$	B) $(x + 6)(x - 2)$
C) $5(3n + 8)(n - 4)$	C) $(x + 15)(x + 1)$
D) $(n + 8)(3n - 4)$	D) $(x + 3)(x + 5)$

3) $9p^2 - 6p + 1$	4) $p^2 - 25$	
A) $(3p - 1)^2$	A) $(p + 5)(p - 5)$	B) $(5p - 3)^2$
B) $(3p + 1)(3p - 1)$	C) $(p + 2)^2$	D) $(4p - 5)^2$
C) Not factorable		
D) $(p + 1)^2$		

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2.1 Finding Zeros

Zeros: The x-value that makes a function equal to zero.

Solving for zeros by factoring: if $axb=0$ then a or b have to equal zero. So if $x(x+p)(x+q)=0$ then $x=0$, $x+p=0$, or $x+q=0$.

Steps:

- GCF
- X-Men
- Trash
- Hippo Butts () ()
- Set equal to zero
- { } name zeros

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Ex 1

$$3x^2 - 17x + 20$$

~~60~~ ~~-12~~ ~~-5~~ ~~-17~~

$$\left(\frac{3x}{3} - \frac{12}{3}\right)\left(3x - 5\right)$$

$$(x - 4)(3x - 5)$$

$x - 4 = 0$ $x = 4$
 $+4$ $+4$

$\left\{4, \frac{5}{3}\right\}$ $3x - 5 = 0$ $3x = 5$ $x = \frac{5}{3}$
 $+5$ $+5$ $\frac{3}{3}$ $\frac{3}{3}$

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ex2 $3x^2 + 10x + 8$

$\left\{-2, -\frac{4}{3}\right\}$

ex3 $9m^2 - 16$

$\left\{\frac{4}{3}, -\frac{4}{3}\right\}$

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Using Graphing Calculator

Steps:

- y=
- enter equation
- graph
- 2nd calc
- #2 zero
- left bound, right bound, guess
- { } name zeros

Zeros are where graph crosses the x-axis

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Ex 4
 $\{-6, 4, 6\}$

Ex 5
 $\{-1, 3, 5\}$

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Find a function of minimum degree with the given zeros:

Ex 6 $x = 2, 5, -5$

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

	x	-5		x^2	$-7x$	10
x	x^2	$(-5x)$	x	x^3	$(-7x^2)$	$(10x)$
-2	$(2x)$	10	5	$(5x^2)$	$(-35x)$	50

$x^2 - 7x + 10$ $f(x) = x^3 - 2x^2 - 25x + 50$

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ex 7

$$f(x) = x^3 + x^2 - 2x$$

$x=0$
 x

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Find a polynomial of degree 3 with real coefficients that satisfies the conditions:

Ex 8 $x = 3, -1, 2$ $f(5) = 10$

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

	x	1		x^2	$-2x$	-3
x	x^2	x	x	x^3	$-2x^2$	$-3x$
-3	$(-3x)$	(-3)	-2	$(-2x^2)$	$(4x)$	(6)

$x^2 - 2x - 3$ $f(x) = x^3 - 4x^2 + x + 6$

$f(5) = 10$ $f(5) = 5^3 - 4(5)^2 + 5 + 6$

$a(x^2 + bx + c) = y = 3b$

$\frac{a(3b)}{3b} = \frac{10}{3b}$ $a = \frac{5}{18}$ $f(x) = \frac{5}{18}(x^3 - 4x^2 + x + 6)$

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Homework

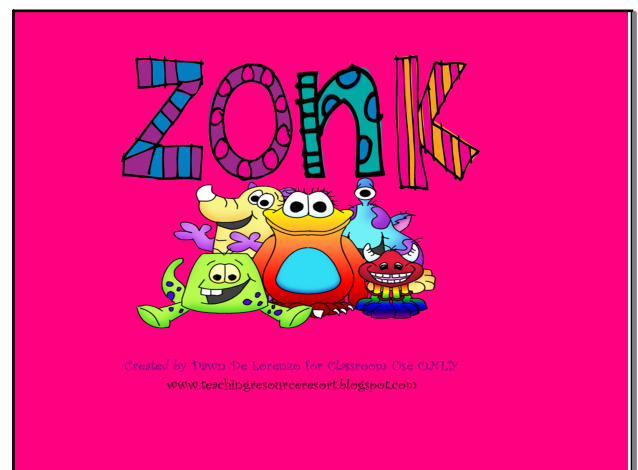
#9 $f(x) = x^4 - 4$

$$(x^2 + 2)(x^2 - 2)$$

$x^2 + 2 = 0$ $\sqrt{x^2} = \sqrt{-2}$

$x^2 - 2 = 0$ $\sqrt{x^2} = \sqrt{2}$ $x = \pm\sqrt{2}$

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Jan 23-2:11 PM

If the team answers correctly, they get to select a monster. If you get a monster with points you win. You get to select 3 monsters unless you get a ZONK, then you get zero points and its the next teams turn. If you get an UTSA you double your score for that turn. If UTSA is first pick then you double your total points.

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Jan 23-2:21 PM