Algebra 2 Bellwork Tuesday, December 8, 2015

1. Write the equation of the quadratic that has the following zeros: -4 & $\frac{2}{3}$ and passes through the point $(-2, 96)$

Factor each completely.

2. $3x^4 - 10x^2 - 8$

3. $4x^3 - 8x^2 - 60x$

4. $24x^3 - 6x$

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Answers

1. Write the equation of the quadratic that has the following zeros: -4 & $\frac{2}{3}$ and passes through the point $(-2, 96)$

Zero $= -4 \rightarrow$ Factor $= (x+4)$

Zero $= 2/3 \rightarrow$ Factor $= (3x-2)$

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

use $(-2, 96)$: $96 = a(-2+4)(3(-2)-2)$

$96 = a(2)(-8)$

$\frac{96}{-16} = \frac{a(-16)}{-16}$ $\quad a = -6$

$y = -6(x+4)(3x-2)$

or

$y = -18x^2 - 60x + 48$

Factor each completely.

2. $3x^4 - 10x^2 - 8$

	x^2	-4
$3x^2$	$3x^4$	$-12x^2$
$+2$	$2x^2$	-10

-24, -12, 2, -10

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

$= (x \pm 2)(3x^2+2)$

3. $4x^3 - 8x^2 - 60x$

$= 4x(x^2 - 2x - 15)$

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

-15, -5, 3, -2

4. $24x^3 - 6x$

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

$= 6x(2x \pm 1)$