Algebra 2 Bellwork Wednesday, November 18, 2015

1. Make a scatter plot of this data.

Year	1950	1960	1965	1970	1975	1980	1990	2000
Population (1000's)	511	625	704	800	921	1018	1409	1894

a) Find either a Linear Regression equation or a Quadratic Regression, whichever is a better fit for the scatter plot. Round to the nearest hundredth.

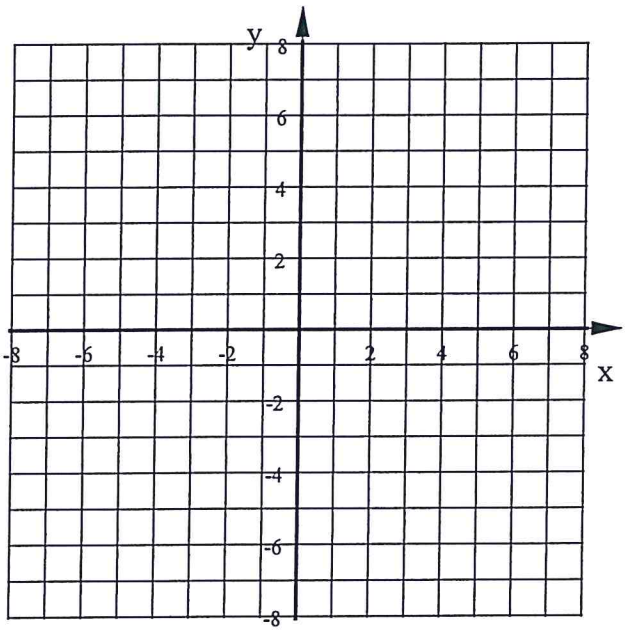
EQ:

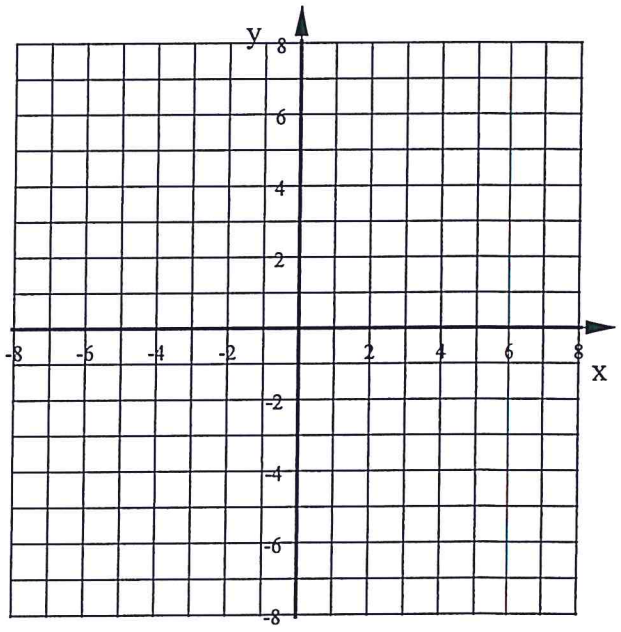
b) Find the population that this model predicts for the year 2015.

2. Graph each quadratic equation with at least five points.

a) $y = -2(x+3)^2 + 5$

b) $y = 3x^2 + 24x + 41$





3. Factor this completely. $8d^5 - 188d^3g^2 - 300dg^4$

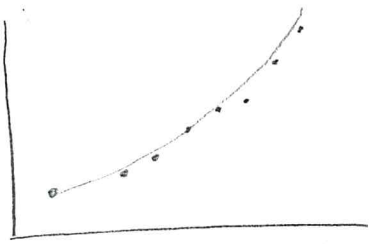
Algebra 2 Bellwork Wednesday, November 18, 2015

1. Make a scatter plot of this data.

Year	1950	1960	1965	1970	1975	1980	1990	2000	X
Population (1000's)	511	625	704	800	921	1018	1409	1894	Y

a) Find either a Linear Regression equation or a Quadratic Regression, whichever is a better fit for the scatter plot. Round to the nearest hundredth.

EQ: $y = .47x^2 - 1825.07x + 1776495.04$



b) Find the population that this model predicts for the year 2015.

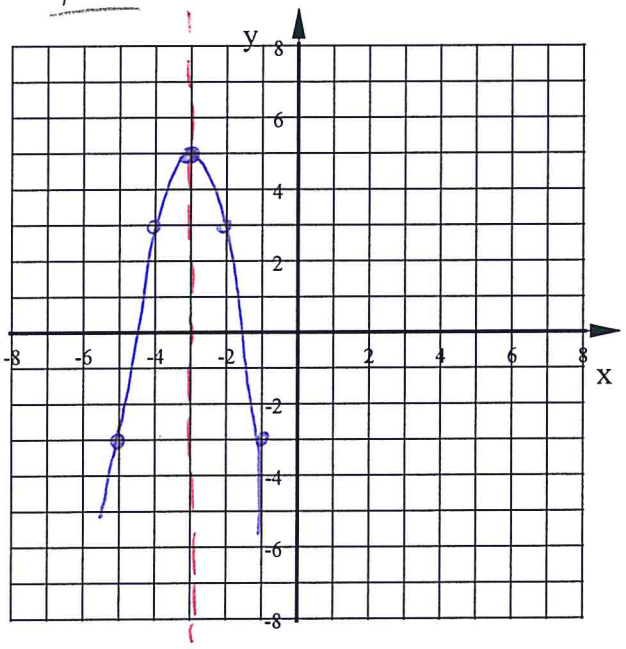
7,284,700 (using above eq)

2. Graph each quadratic equation with at least five points.

a) $y = -2(x+3)^2 + 5$

Vertex (-3, 5)
LOS $x = -3$
y-int = -13
upside down
2x taller

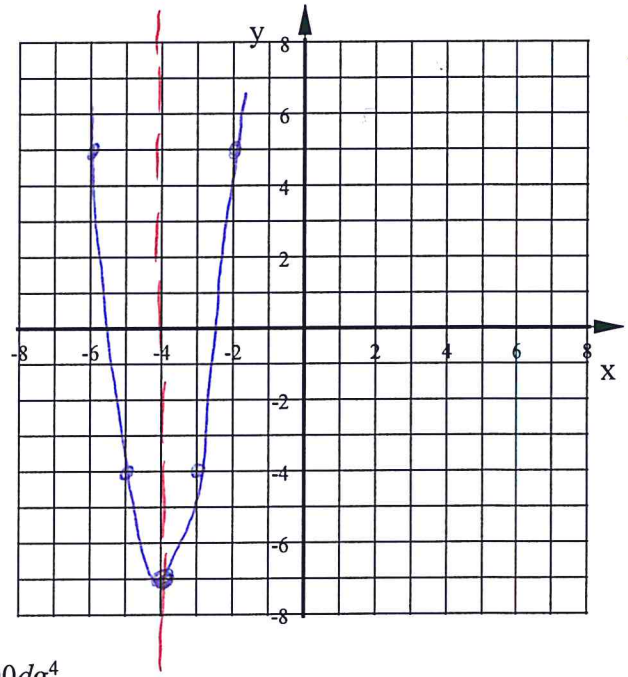
X	Y
-2	3
-1	-3



b) $y = 3x^2 + 24x + 41$

LOS $x = \frac{-24}{6} = -4$
y-int = 41
Vertex (-4, -7)
3x Taller

X	Y
-3	-4
-2	5



3. Factor this completely. $8d^5 - 188d^3g^2 - 300dg^4$

GCF = $4d$

$4d(2d^4 - 47d^2g^2 - 75g^4)$

$4d(2d^2 + 3g^2)(d^2 - 25g^2)$

$4d(2d^2 + 3g^2)(d + 5g)(d - 5g)$

	d^2	$-25g^2$
$2d^2$	$2d^4$	$-50d^2g^2$
$+3g^2$	$+3d^2g^2$	$-75g^4$

-150
-50 +3
-47