Algebra 1 – Downing Name 3/29 - Notes

8.3B Graphing Quadratics with GDC Graph paper attached

Using your graphing calculator, find the vertex, roots, and y-intercept. Then identify the maximum or minimum value along with the domain and range.

1) $y = \overset{a}{2}x^2 + \overset{b}{4}x$

AOS: $x = \frac{-b}{2a} = \frac{-4}{2(2)} = \frac{-4}{4} = -1$

$y = 2(-1)^2 + 4(-1) = -2$

Vertex: $(-1, -2)$
Roots: $(-2,0)(0,0)$ ← use graphing calculator
y-int: $(0,0)$
Max/(min) $y = -2$
Domain: $x \in \mathbb{R}$ or all real numbers
Range: $y \geq -2$

2) $y = x^2 + 2x + 4$

3) $y = -2x^2 - 8x - 6$

AOS: $= \frac{-b}{2a} = \frac{8}{2(-2)} = \frac{8}{-4} = -2 = x$

$y = -2(-2)^2 - 8(-2) - 6$
$y = 2$

Vertex: $(-2, 2)$
Roots: $(-1,0)(-3,0)$
y-int: $(0, -6)$
(max)/min: $y = 2$
Domain: $x \in \mathbb{R}$
Range: $y \leq 2$

4) $y = x^2 + 8x + 20$

5) $f(x) = (x - 3)^2 - 1$

Vertex: $(3, -1)$
Roots: $(2,0)(4,0)$
y-int $(0,$) ← use graphing calculator
max/(min) -1
Domain $x \in \mathbb{R}$
Range $y \geq -1$

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

No HW

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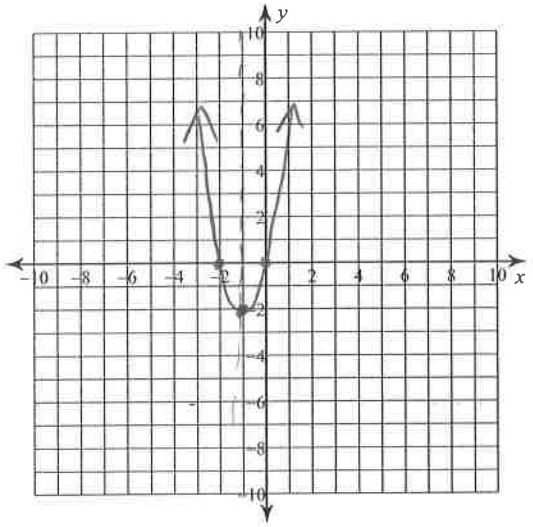
Graph Paper for WS 8.3B

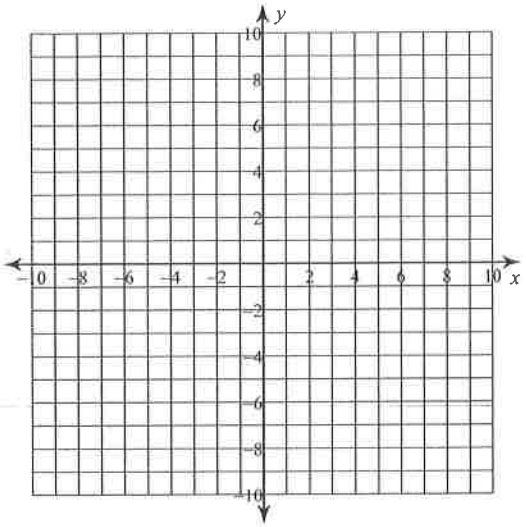
Date _____ Period ____

Use the graph provided to graph the parabolas on WS 8.3B.

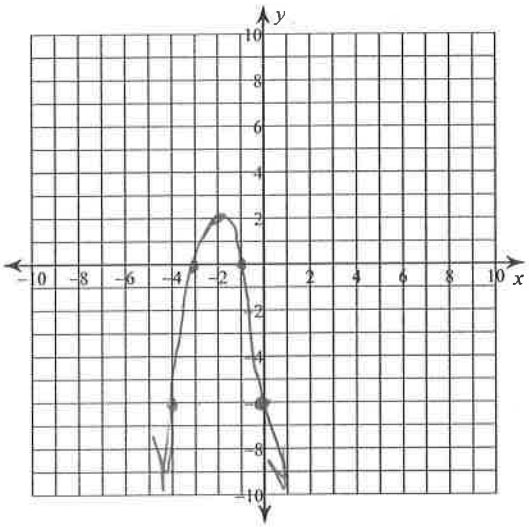
1)



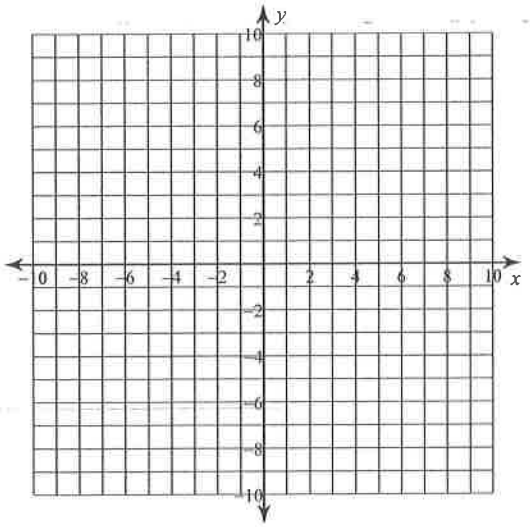
2)



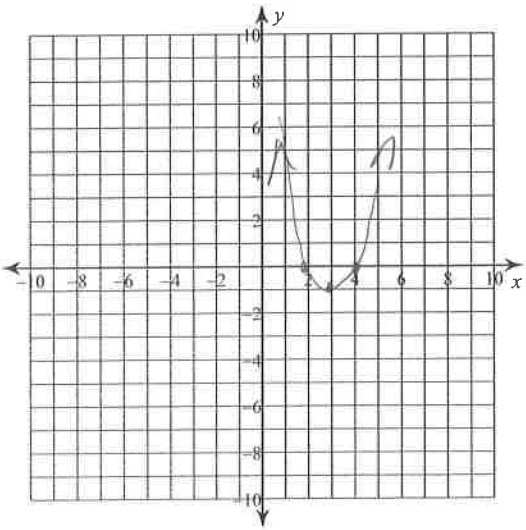
3)



4)



5)



6)