Integrated Math 3 Name KEY

4.1 (Day 1) Homework

Quadratic Functions in Standard Form

For each of the following quadratic functions: (a) State what form it's in; (b) State whether it would be Concave Up or Concave Down; and (c) State the y-intercept.

1) $f(x) = \frac{3}{7}x^2 + 6x - 12$

Form: Standard

Concave: Up or Down

y-int: (0, -12)

2) $f(x) = x^2 - 9$

Form: Standard

Concave: Up or Down

y-int: (0, -9)

3) $f(x) = -4x^2 + 2x + 8$

Form: Standard

Concave: Up or Down

y-int: (0, 8)

4) $f(x) = -\frac{1}{5}x^2 + 5$

Form: Standard

Concave: Up or Down

y-int: (0, 5)

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

Form: Standard

Concave: Up or Down

y-int: (0, -3)

6) $f(x) = 3x^2 + 2.5$

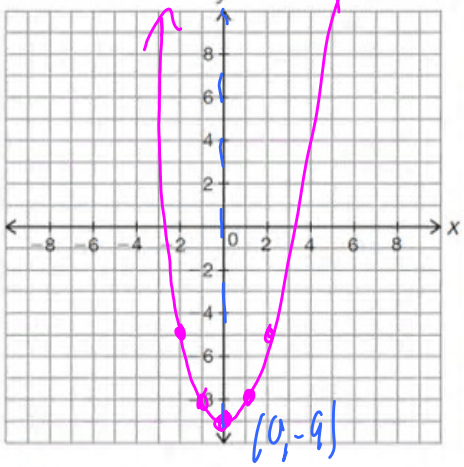
Form: Standard

Concave: Up or Down

y-int: (0, 2.5)

7) Graph: $f(x) = x^2 - 9$

X	Y
-2	-5
-1	-8
0	-9
1	-8
2	-5



X = 0

Domain: $(-\infty, \infty)$

Range: $[-9, \infty)$

y-intercept: (0, -9)

zeros: (-3, 0) (3, 0)

Interval of increase: $(0, \infty)$

Interval of decrease: $(-\infty, 0)$

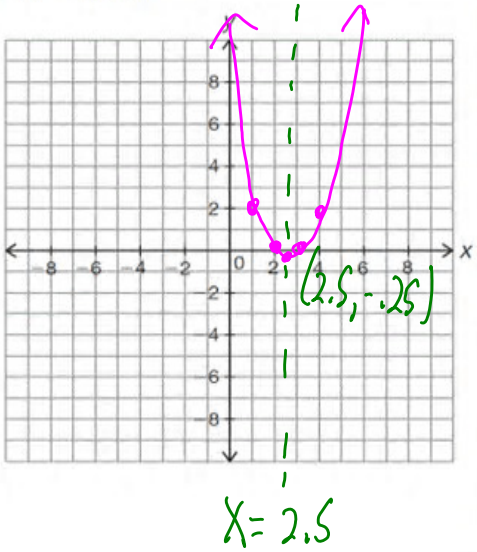
Equation of axis of symmetry: X = 0

Max or min?	What is max/min?	Where is max/min?
	-9	(0, -9)

$\frac{-b}{2a}$ $\frac{5}{2}$

8) Graph: $f(x) = x^2 - 5x + 6$

X	Y
1	2
2	0
2.5	-.25
3	0
4	2



Domain: $(-\infty, \infty)$

Range: $[-.25, \infty)$

y-intercept: $(0, 6)$

zeros: $(2,0)$ $(3,0)$

Interval of increase: $(2.5, \infty)$

Interval of decrease: $(-\infty, 2.5)$

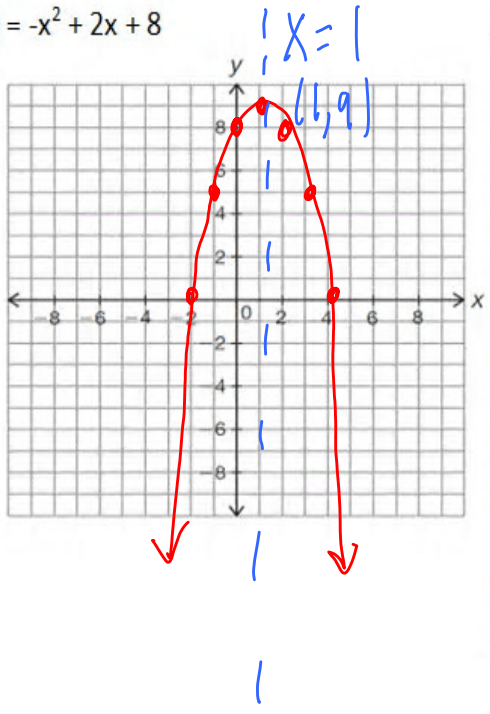
Equation of axis of symmetry: $X = 2.5$

Max or min? What is max/min? Where is max/min?

$-.25$ $(2.5, -.25)$

9) Graph: $f(x) = -x^2 + 2x + 8$

X	Y
-1	5
0	8
1	9
2	8
3	5



$\frac{-2}{2(-1)} = \frac{-2}{-2} = 1$

Domain: $(-\infty, \infty)$

Range: $(-\infty, 9]$

y-intercept: $(0, 8)$

zeros: $(-2, 0)$ $(4, 0)$

Interval of increase: $(-\infty, 1)$

Interval of decrease: $(1, \infty)$

Equation of axis of symmetry: $X = 1$

Max or min? What is max/min? Where is max/min?

9 $(1, 9)$