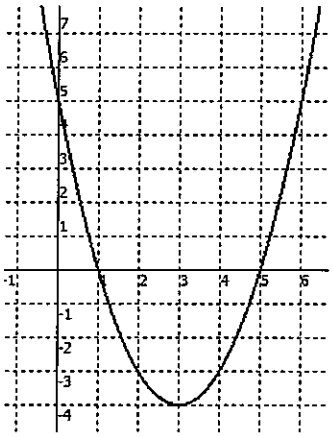
Name: Key
Period: ____

Review on March 14th (A-day) and March 15th (B-day)

1. Given the graph of $f(x)$

$f(x) =$



a) State the y-intercept (,)

b) State the x-intercepts (,) and (,)

c) Write the equation of the function

$f(x) =$ in vertex form

in factored form

in standard form

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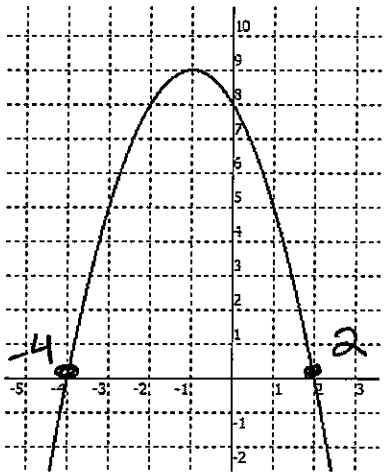
2. Given the graph of $g(x)$

$g(x) =$



a) State the y-intercept (0, 8)

b) State the x-intercepts (2, 0) and (-4, 0)

c) Write the equation of the function

$g(x) = -(x+1)^2 + 9$ in vertex form

$g(x) = -(x+4)(x-2)$ in factored form

$g(x) = -[x^2 - 2x + 4x - 8]$ in standard form

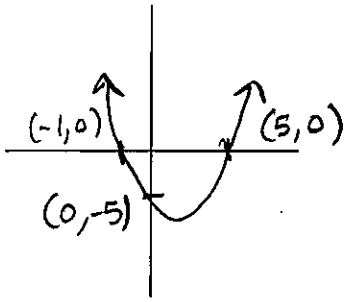
$g(x) = -x^2 - 2x + 8$

Determine the x-intercepts and y-intercept.
Draw a rough sketch of the function.

3. $f(x) = (x-5)(x+1)$

x-intercept(s): (5, 0) (-1, 0)

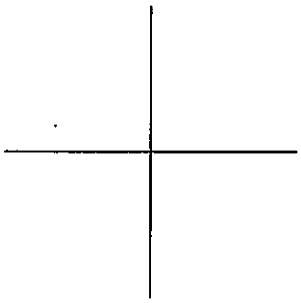
y-intercept: (0, -5)



4. $g(x) = -(x+2)(x+4)$

x-intercept(s): _____

y-intercept: _____



Given an equation: Rewrite the equation in the form of $f(x) = (x-h)^2 - k$

(a) vertex, **(b) if the vertex is a maximum or minimum,**
(c) y-intercept, **(d) then, sketch a rough graph**

5. $f(x) = x^2 + 8x + 1$

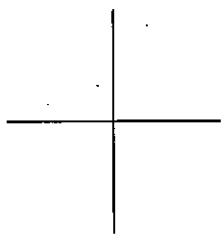
$\left(\frac{\quad}{2}\right)^2 = (\quad)^2 = \_\_\_\_$

$f(x) = x^2 + 8x \_\_\_\_ + 1 \_\_\_\_$

$f(x) = (\quad)^2 + 1 \_\_\_\_$

$f(x) = (\quad)^2 \_\_\_\_$

vertex: (,)
maximum / minimum
y-intercept: (,)



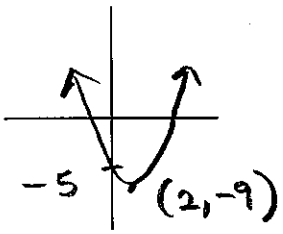
6. $f(x) = x^2 - 4x - 5$

$\left(\frac{-4}{2}\right)^2 = (-2)^2 = 4$

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

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

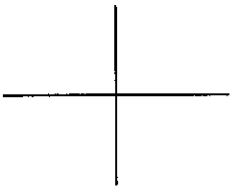
vertex: (2 , -9)
maximum / minimum
y-intercept: (0 , -5)



Also, find the x-intercepts for problems 7, 8, 9

7. $f(x) = x^2 - 4x - 32$

vertex: (,)
maximum / minimum
y-intercept: (,)



x-intercepts:
(,) and (,)

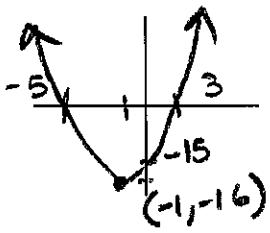
8. $f(x) = x^2 + 2x - 15$

$\left(\frac{2}{2}\right) = 1$

$f(x) = x^2 + 2x \underline{+1} - 15 \underline{-1}$

$f(x) = (x+1)^2 - 16$

vertex: (-1 , -16)
maximum / minimum
y-intercept: (0 , -15)



x-intercepts:
(-5 , 0) and (3 , 0)

$x^2 + 2x - 15 = 0$

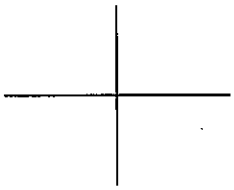
$(x+5)(x-3) = 0$

$x+5=0 \quad x-3=0$

$x = -5, 3$

9. $f(x) = x^2 - 6x - 7$

vertex: (,)
maximum / minimum
y-intercept: (,)



x-intercepts:
(,) and (,)

List the four methods for solving quadratic equations in class

A) Quadratic Formula C) Square Roots

B) Factoring D) Graphing

Solve the following equations using any method – You must practice all 4 methods.
(Use the easiest method when solving each problem – You must show your work)

10. $x^2 - 13x + 22 = 0$

M: 22
A: -13
-11, -2

$(x-11)(x-2)=0$

$x-11=0 \quad x-2=0$

$x=11 \quad x=2$

11. $x^2 = 9x - 20$

12. $x^2 + x + 1 = 0$

$a=1$
$b=1$
$c=1$

$x = \frac{-(1) \pm \sqrt{(1)^2 - 4(1)(1)}}{2(1)}$

$x = \frac{-1 \pm i\sqrt{3}}{2}$

13. $x^2 + 25 = 0$

$x^2 = -25$

$\sqrt{x^2} = \sqrt{-25}$

$x = \pm 5i$

$x = 5i, -5i$

14. $(x+8)^2 + 6 = 0$

15. $6x^2 = 2x$

$6x^2 - 2x = 0$

$2x(3x-1) = 0$

$2x = 0 \quad 3x - 1 = 0$

$x = 0 \quad x = \frac{1}{3}$

16. $4x^2 = 6x + 2$

$x = \frac{3 \pm 2\sqrt{17}}{4}$

17. $2x^2 - x = 4$

$2x^2 - x - 4 = 0$

and finish

18. $2 = 5x^2 - 3x$

$x = 1, -\frac{2}{5}$

19. $7x^2 - 14x = 0$

20. $x^2 + 4x - 3 = 0$

21. $3(x-1)^2 - 5 = 70$

$3(x-1)^2 = 75$

$(x-1)^2 = 25$

$\sqrt{(x-1)^2} = \sqrt{25}$

$x - 1 = \pm 5$

$\cancel{x = 1 \pm 5}$