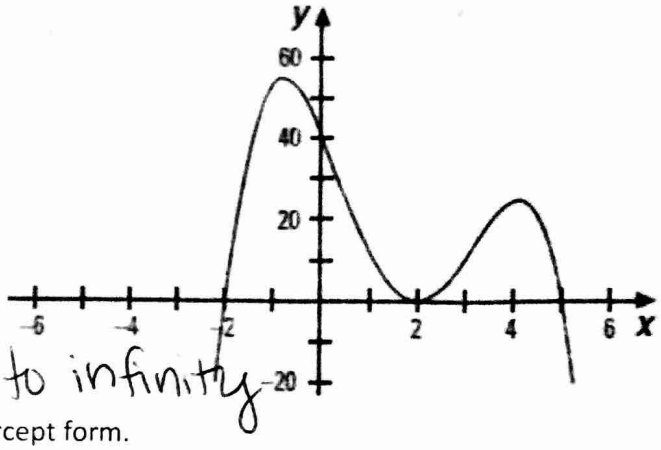
Algebra II – Unit 4 Review: Graphs of Polynomials

Name: Key

Date: _____ Block: _____

1. Use the graph at the right to answer questions a-d about $P(x)$.



a) What are the real zeros? $-2, 2, 5$

b) Describe the end behavior of $P(x)$.

As $x \to$ ∞, $P(x) \to$ $-\infty$

and as $x \to$ $-\infty$, $P(x) \to$ $-\infty$

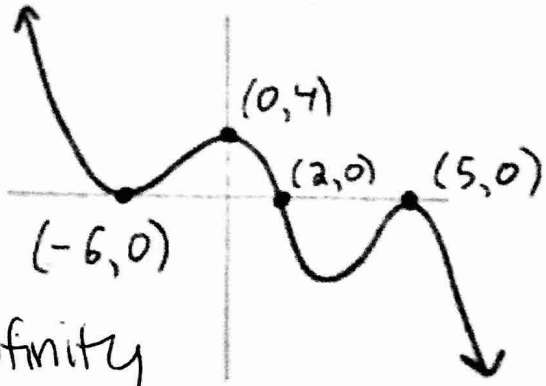
c) Determine whether $P(x)$ is even or odd and justify your decision.

even - bothe ends go to infinity

d) Write an equation that best represents $P(x)$ in intercept form.

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

2. Use the graph at the right to answer questions a-d about $F(x)$.



a) What are the real zeros? $-6, 2, 5$

b) Describe the end behavior of $F(x)$.

As $x \to$ ∞, $F(x) \to$ $-\infty$

and as $x \to$ $-\infty$, $F(x) \to$ ∞

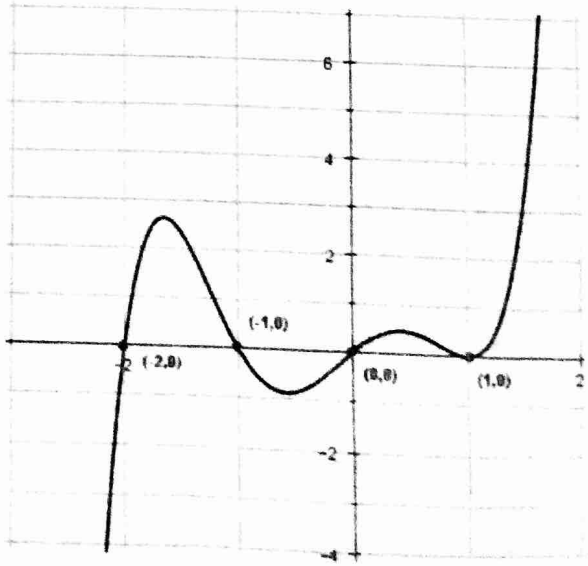
c) Determine whether $F(x)$ is even or odd and justify your decision.

odd - ends go to ~~di~~ oposite infinity

d) Write an equation that best represents $F(x)$ in intercept form.

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

3. Use the graph at the right to answer questions a-d about $g(x)$.



a) What are the real zeros? $-2, -1, 0, 1$

b) Describe the end behavior of $g(x)$.

As $x \to$ ∞, $g(x) \to$ ∞

and as $x \to$ $-\infty$, $g(x) \to$ $-\infty$

c) Determine whether $g(x)$ is even or odd and justify your decision.

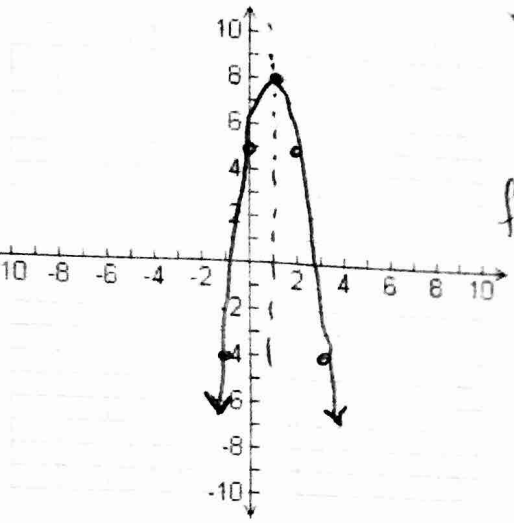
odd - ends go to ~~different~~ opposite infinity

d) Write an equation that best represents $g(x)$ in intercept form.

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

4. Sketch the graph of each function in a-c:

a) $f(x) = -3x^2 + 6x + 5$



vertex $\frac{-6}{2(-3)}$

$= 1$

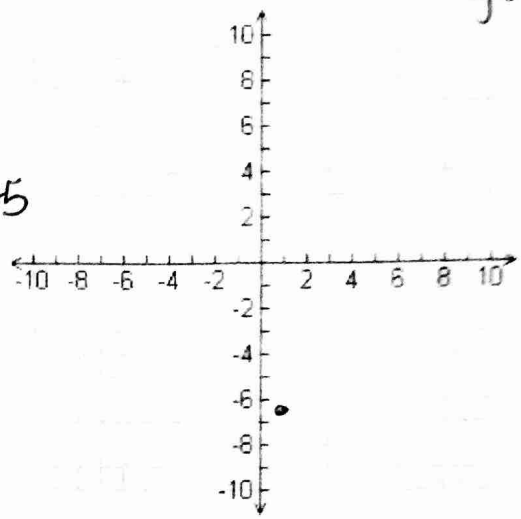
$f(1) = -3(1)^2 + 6(1) + 5$

$-3 + 6 + 5$

$= 8$

x	y
0	5
2	5
-1	-4

b) $g(x) = \frac{1}{2}x^2 - 7$



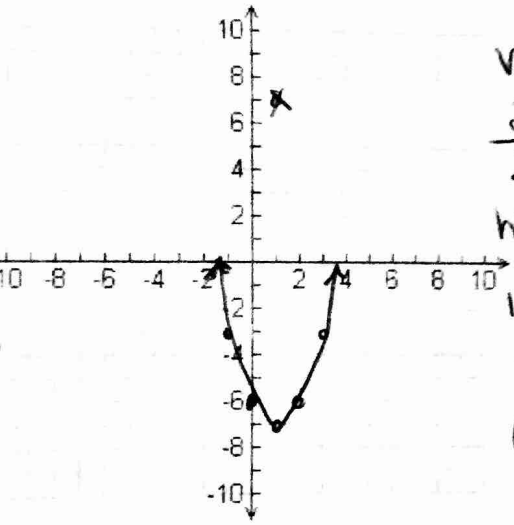
vertex: $\frac{0}{2(\frac{1}{2})}$

$g(1) = \frac{1}{2}(1)^2 - 7$

$= -6.5$

x	y

) $h(x) = x^2 - 2x - 6$



vertex

$\frac{2}{2} = 1$

$h(1) = (1)^2 - 2(1) - 6$

$1 - 2 - 6$

$= -7$

$(1, -7)$

5. What features in a function affect the end behaviors of its graph?

degree & leading coefficient

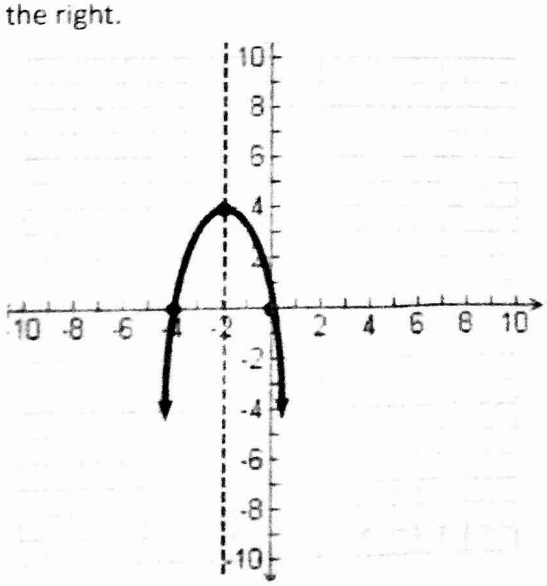
6. Where is the y-intercept shown in the standard form of a function?

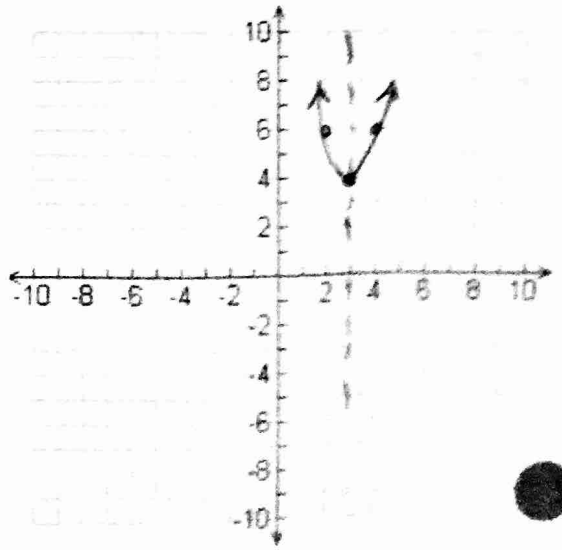
$ax^2 + bx + c$

7. How are the degree and the number of x-intercepts related?

no more x-intercepts than the degree

. Explain the mistakes that Miss Grigsby made when graphing the function, $h(x) = 2(x - 3)^2 + 4$, and make a sketch f the correct graph on the grid to the right.





listakes:

opens wrong direction

h = 3

~~x~~ = AOS = 3

graph was too wide (points were

x	y
~~4~~ 6	~~6~~ 10