Uncommon Schools | Change History.

Name _____ Seat # _____ Date _____

Pre-AP Calculus Education is Freedom

2.09 – Homework **Binder Section: HW**

Part I: New Material – Multiplicity

1. Find all zeros of $p(x)$ and state the multiplicity of each:

$$p(x) = (3x^2 + 8x - 16)(2x^2 - 32)$$

Zero	Multiplicity

2. Find all zeros of $a(x)$ and state the multiplicity of each:

$$a(x) = (-x^2 + 4x + 60)(x^3 - 8)$$

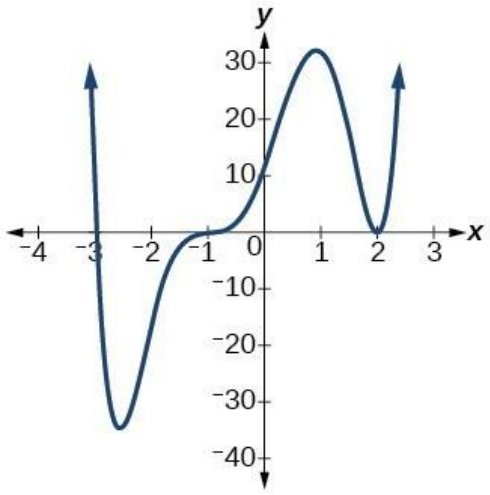
Zero	Multiplicity

3. Find all zeros of $q(x)$ and state the multiplicity of each:

$$q(x) = (x^6 - 81x^2)(x^3 - 18x^2 + 81x)$$

Zero	Multiplicity

4. Consider the graph of the polynomial function $f(x)$ shown below.



Graph of $f(x)$

(a) Identify the zeros of $f(x)$.

(b) Identify the multiplicity of each zero. Justify each of your answers using evidence from the graph.

Part II: Spiral Material – keep the math fresh!

5. Assume that $f(x)$ and $g(x)$ are functions whose graphs both pass through the point $(3, -6)$. If $f(x)$ is odd and $g(x)$ is even, then $f(x)$ must also pass through _____ (Blank #1) while $g(x)$ must also pass through _____ (Blank #2). **Justify your answers.**

Justification

Blank #1	Blank #2
A. $(3, 6)$	A. $(3, 6)$
B. $(-3, 6)$	B. $(-3, 6)$
C. $(-3, -6)$	C. $(-3, -6)$
D. $(3, -6)$	D. $(3, -6)$
E. $(-6, 3)$	E. $(-6, 3)$