

APPC Lessons 2.1 to 2.4 Quiz

Name _____

1. If the ordered pair $(-3, 7)$ is on the graph of an odd function with domain all reals, what other point is guaranteed to be on the graph?

A) $(-3, -7)$

B) $(3, 7)$

C) $(3, -7)$

D) $(7, -3)$

-  2. Selected values of a polynomial function g are given in the table. Determine the degree of g .

x	-2	0	2	4	6	8
$g(x)$	24	-4	8	36	56	44

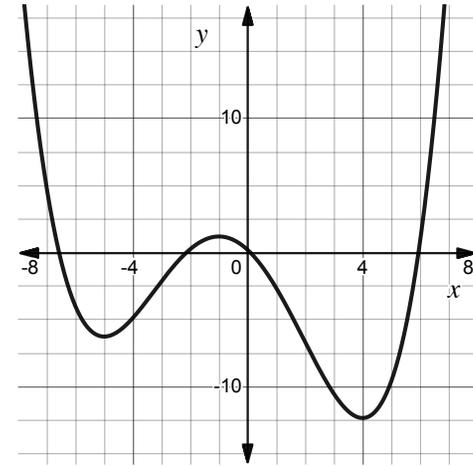
3. The graph of a polynomial function $y = h(x)$ is shown.

a. Is the degree of this function even or odd?

b. On which interval(s) is the rate of change of h positive?

c. Is h changing faster at $x = -2$ or $x = 2$? Explain.

d. Estimate the instantaneous rate of change of h at $x = -5$.



4. It is known for a function f that $\lim_{x \rightarrow \infty} f(x) = -\infty$ and $\lim_{x \rightarrow -\infty} f(x) = \infty$. Which of the following could represent the equation for f ?

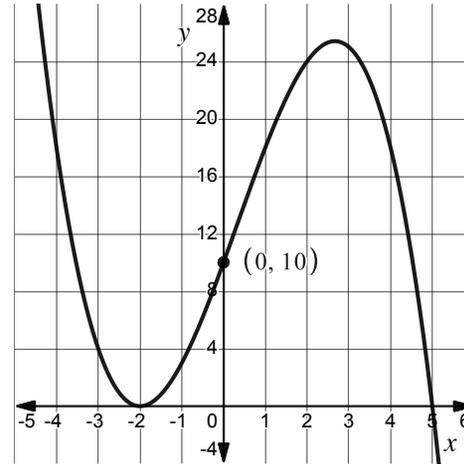
A) $f(x) = 7x^6 - 5x^4 - 3x^2 + 11$

B) $f(x) = -2x^5 + 8x^3 - 10x^2 - 20$

C) $f(x) = -3x^4 + 13x^3 + 20x^2 - 4x + 1$

D) $f(x) = 8x^2 - 14x + 9$

5. The graph of a function g is shown in the xy -plane. All x -intercepts are shown. Write the equation for $g(x)$ in intercept form.



6. Let $f(x) = x^3 - 7x + 3$. Is f an even function, an odd function, or neither? Show the analysis that leads to your answer.
7. A polynomial function g has zeros at $x = -1 - 6i$, $x = 3$, and $x = 8 + \sqrt{11}$. What is the minimum degree of g ? Give a reason for your answer.

8. Consider the function $h(x) = 2(x - 3)^2(x - 1)^2(x + 4)$.
- Identify the degree of h .
 - Describe the end behavior of h using limit notation.
 - Find the y -intercept of h .
 - State the real zeros of h and their multiplicity.

9. The graph of a polynomial function $y = f(x)$ is shown. Let g be a function such that $g(x) = f(x) + k$ for some constant k . For which value of k does g have exactly 6 real zeros, including multiplicity?

- $k = -4$
- $k = 2$
- $k = 6$
- $k = 11$

