

Adv. Algebra 2 – Concept Quiz

Name: Key
 Date: _____ Period: _____

Form A

10. What is a Polynomial?

1. Use, $f(x) = 13 - 9x + 5x^8 - x^{11}$, to answer the questions below:

a) Write $f(x)$ in standard form.

$$f(x) = -x^{11} + 5x^8 - 9x + 13$$

b) What is leading coefficient of $f(x)$?

$$-1$$

c) What is the constant term of $f(x)$?

$$13$$

d) What is the degree of $f(x)$?

$$11$$

2. Clare wants to make an open-top box by cutting out corners of a 50 inch by 10 inch piece of poster board and then folding up the sides. The volume $V(x)$ in cubic inches of the open-top box is a function of the side length x in inches of the square cutouts.

a) Write an expression for $V(x)$.

$$V(x) = (50 - 2x)(10 - 2x)x$$

b) What is the y-intercept of V ? What does it mean in this context?

$(0, 0)$ If you cut out square of dimensions 0×0 , the volume will be zero.

12. Graphs of Polynomials

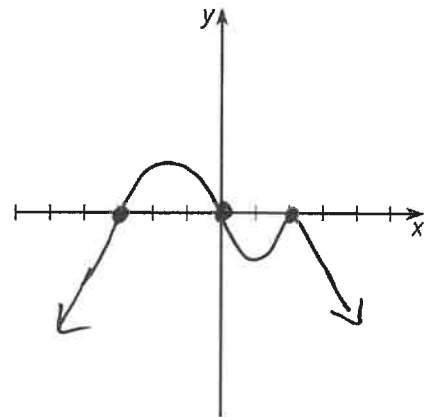
1. Let $f(x) = -x(x + 3)(x - 2)^2$ be a polynomial function.

a. Sketch a graph of the polynomial.

b. Name all of the horizontal and vertical intercepts.

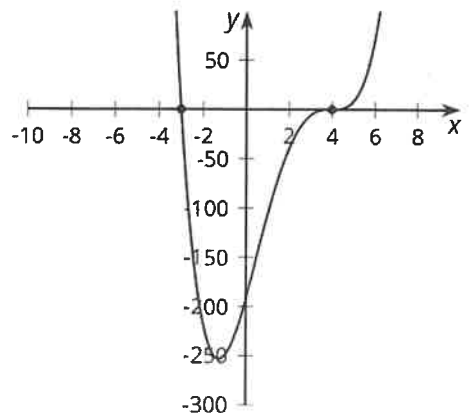
H.I.: $(0, 0), (-3, 0), (2, 0)$ m2
 V.I.: $(0, 0)$

c. State the end behavior of the graph.



2. The graph of a polynomial function f is shown. Circle all the true statements about the polynomial.

- a. The degree of the polynomial is odd.
- b. The polynomial f has factor of $(x - 4)$ with a multiplicity of 3.
- c. The leading coefficient is positive.
- d. The constant term of the polynomial is negative.



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Form B

10. What is a Polynomial?

1. Use, $f(x) = 10x - 4 + 5x^6 - 4x^5$, to answer the questions below:

a) Write $f(x)$ in standard form.

b) What is leading coefficient of $f(x)$?

$$f(x) = 5x^6 - 4x^5 + 10x - 4$$

5

c) What is the constant term of $f(x)$?

d) What is the degree of $f(x)$?

-4

6

2. Clare wants to make an open-top box by cutting out corners of a 35 inch by 15 inch piece of poster board and then folding up the sides. The volume $V(x)$ in cubic inches of the open-top box is a function of the side length x in inches of the square cutouts.

a) Write an expression for $V(x)$.

$$V(x) = (35 - 2x)(15 - 2x)x$$

b) What is the y-intercept of V ? What does it mean in this context?

(0,0)

If you cut out a square of dimension 0×0 , the volume of the box would be 0 in^3 .

12. Graphs of Polynomials

1. Let $f(x) = x(x - 2)(x + 1)^2$ be a polynomial function.

a. Sketch a graph of the polynomial.

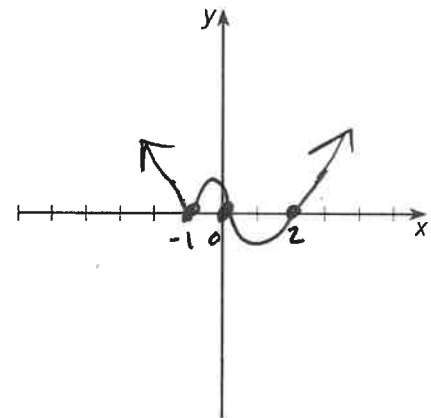
b. Name all of the horizontal and vertical intercepts.

H.I. (0,0), (2,0), (-1,0) m2

V.I. (0,0)

c. State the end behavior of the graph.

↖ ↗



2. The graph of a polynomial function f is shown. Circle all the true statements about the polynomial.

a) The degree of the polynomial is even.

b. The leading coefficient is negative.

c. The constant term of the polynomial is positive.

d. The polynomial f has factor of $(x - 4)$ with a multiplicity of 2.

