Polynomial Functions Test

1. What is the degree of the polynomial $-4x^7 + 3x^5 + 7x + 6$?

c. 14

d. 7

2. What is the result of $(8x^4 - 12x^3 + 6) - (4x^3 + 2x - 9)$?

a.
$$4x+14x+15$$

c.
$$8x^4 - 16x^3 - 2x + 15$$

b.
$$8x^4 - 8x^3 + 2x - 9$$

d.
$$8x^4 - 16x^3 + 2x - 3$$

3. What is the result of $(4x^3+5x^2+3)(4x^2-9)$?

a.
$$16x^5 + 20x^4 - 36x^3 - 33x^2 - 27$$

c.
$$16x^5 + 20x^4 + 36x^3 + 57x^2 + 27$$

b.
$$16x^6 + 5x^4 - 36x^3 - 33x^2 - 27$$

d.
$$16x^5 + 20x^4 + 12x^2$$

4. Which expression represents the expanded form of $(-2x + y)^3$?

a.
$$8x^3 + 12x^2y + 6xy^2 + y^3$$

c.
$$-8x^3 - 4x^2y + 2xy^2 + y^3$$

b.
$$-8x^3 + 12x^2y - 6xy^2 + y^3$$

d.
$$8x^3 - 4x^2y - 2xy^2 + y^3$$

 5_i Which polynomial function has zeros of -3, -1, and 2?

a.
$$f(x) = x^3 - 7x - 6$$

b.
$$f(x) = x^3 + 4x^2 + x - 6$$

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

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

6. What are all the possible rational roots for the polynomial equation $5x^3 - 3x^2 + 6x - 20 = 0$?

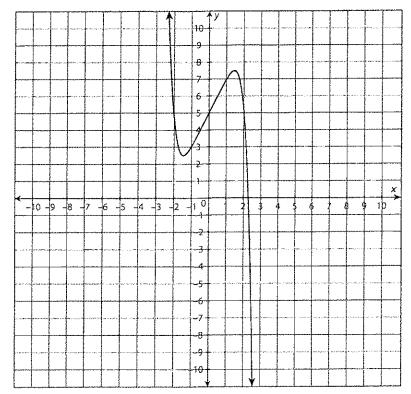
a.
$$\pm \frac{1}{4}$$
, $\pm \frac{1}{5}$, $\pm \frac{1}{20}$, $\pm \frac{5}{4}$, ± 1 , ± 5

b.
$$\pm 1$$
, ± 4 , ± 5 , ± 20

c.
$$\pm \frac{1}{5}$$
, $\pm \frac{2}{5}$, $\pm \frac{4}{5}$, ± 1 , ± 2 , ± 4 , ± 5 , ± 10 , ± 20

d.
$$\pm 1$$
, ± 2 , ± 4 , ± 5 , ± 10 , ± 20

7. What must be true about the degree and the leading coefficient of the graphed polynomial?



- a. The polynomial is an odd-degree polynomial and has a positive coefficient.
- b. The polynomial is an odd-degree polynomial and has a negative coefficient.
- c. The polynomial is an even-degree polynomial and has a positive coefficient.
- d. The polynomial is an even-degree polynomial and has a negative coefficient.
- \emptyset . What is the remainder when $(x^3 4x^2 + 10)$ is divided by (x 3)?
 - a. 1

c. 31

b. -53

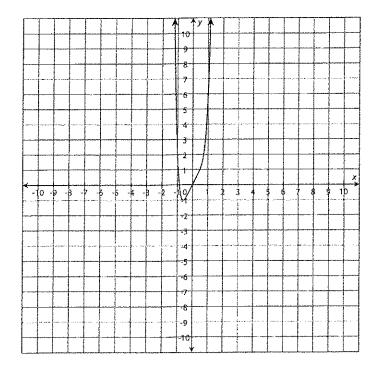
- d. 7
- \(\)\ Using synthetic substitution, what is $p(x) = x^3 6x^2 5x + 12$ when x = -4?
 - a. -40

c. -6

b. -128

d. 72

(). Which function could possibly represent the graphed function?



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

$$c. \quad f(x) = 4x^6 + 2x$$

b.
$$f(x) = 4x^5 + 8x$$

d.
$$f(x) = -4x^5 + 3x$$