

Exercises - Polynomial Functions and Their Graphs

1

If -1 and 1 are two real roots of the polynomial function $f(x) = ax^3 + bx^2 + cx + d$ and $(0, 3)$ is the y -intercept of graph of f , what is the value of b ?

- A) -3
- B) -1
- C) 2
- D) 4

2

What is the remainder of polynomial $p(x) = 81x^5 - 121x^3 - 36$ divided by $x + 1$?

- A) -76
- B) -36
- C) 4
- D) 6

3

If $x - 2$ is a factor of polynomial $p(x) = a(x^3 - 2x) + b(x^2 - 5)$, which of the following must be true?

- A) $a + b = 0$
- B) $2a - b = 0$
- C) $2a + b = 0$
- D) $4a - b = 0$

4

x	$f(x)$
-4	-10
-3	0
-1	-4
2	20

The function f is defined by a polynomial. Some values of x and $f(x)$ are shown in the table above. Which of the following must be a factor of $f(x)$?

- A) $x + 4$
- B) $x + 3$
- C) $x + 1$
- D) $x - 2$

5

$$x^3 - 8x^2 + 3x - 24 = 0$$

For what real value of x is the equation above true?

6

If $x > 0$, what is the solution to the equation $x^4 - 8x^2 = 9$?