

Use the Leading Coefficient Test to determine the end behavior of the polynomial function.

- 9) $f(x) = 4x^4 - 3x^3 - 5x^2 + 2x - 5$ 9) _____
A) falls to the left and rises to the right B) rises to the left and rises to the right
C) falls to the left and falls to the right D) rises to the left and falls to the right

- 10) $f(x) = 3x^3 - 3x^2 - 5x - 2$ 10) _____
A) rises to the left and rises to the right B) falls to the left and falls to the right
C) falls to the left and rises to the right D) rises to the left and falls to the right

Find the zeros of the polynomial function.

- 11) $f(x) = x^3 + x^2 - 42x$ 11) _____
A) $x = 0, x = -7, x = 6$ B) $x = 5, x = 6$
C) $x = 0, x = 5, x = 6$ D) $x = -7, x = 6$

- 12) $f(x) = 3(x + 3)(x - 3)^4$ 12) _____
A) $x = 3, x = 4$ B) $x = -3, x = 4$
C) $x = 3, x = -3, x = 4$ D) $x = -3, x = 3,$

Find the zeros for the polynomial function and give the multiplicity for each zero. State whether the graph crosses the x-axis or touches the x-axis and turns around, at each zero.

- 13) $f(x) = 3(x + 1)(x + 7)^2$ 13) _____
A) 1, multiplicity 1, crosses x-axis; 7, multiplicity 2, touches x-axis and turns around
B) 1, multiplicity 1, touches x-axis and turns around; 7, multiplicity 2, crosses x-axis
C) -1, multiplicity 1, touches x-axis and turns around; -7, multiplicity 2, crosses x-axis
D) -1, multiplicity 1, crosses x-axis; -7, multiplicity 2, touches x-axis and turns around

- 14) $f(x) = 5(x + 3)(x - 5)^3$ 14) _____
A) -3, multiplicity 1, crosses x-axis; 5, multiplicity 3, crosses x-axis
B) -3, multiplicity 1, crosses x-axis; 5, multiplicity 3, touches x-axis and turns around
C) 3, multiplicity 1, touches x-axis; -5, multiplicity 3, touches x-axis and turns around
D) 3, multiplicity 1, crosses x-axis; -5, multiplicity 3, crosses x-axis

Use the Intermediate Value Theorem to determine whether the polynomial function has a real zero between the given integers.

- 15) $f(x) = 6x^3 - 9x^2 - 6x + 8$; between 1 and 2 15) _____
A) $f(1) = -1$ and $f(2) = -8$; no B) $f(1) = 1$ and $f(2) = -8$; yes
C) $f(1) = 1$ and $f(2) = 8$; no D) $f(1) = -1$ and $f(2) = 8$; yes

Determine the maximum possible number of turning points for the graph of the function.

- 16) $f(x) = 6x^3 + 5x^2 - 9x - 15$ 16) _____
A) 0 B) 2 C) 6 D) 3

- 17) $f(x) = x^5 + 9x^6$ 17) _____
A) 6 B) 9 C) 1 D) 5

Answer Key

Testname: PRACTICE02

- 1) D
- 2) A
- 3) C
- 4) A
- 5) C
- 6) A
- 7) A
- 8) C
- 9) B
- 10) C
- 11) A
- 12) D
- 13) D
- 14) A
- 15) D
- 16) B
- 17) D