

Assignment

Date _____ Period _____

Describe the end behavior of each function.

1) $f(x) = x^2 - 5$

- A) Rises to the left. Falls to the right
- B) Falls to the left. Rises to the right
- C) Rises to the left. Rises to the right
- D) Falls to the left. Falls to the right

2) $f(x) = -x^2 - 4x$

- A) Falls to the left. Rises to the right
- B) Falls to the left. Falls to the right
- C) Rises to the left. Falls to the right
- D) Rises to the left. Rises to the right

3) $f(x) = -x^5 + 4x^3 - 4x + 1$

4) $f(x) = -x^5 + 4x^3 - x - 1$

5) $f(x) = x^5 - 4x^3 + 4x + 2$

6) $f(x) = -x^3 + x^2 - 1$

7) $f(x) = x^3 - x^2$

8) $f(x) = x^2 + 4x + 5$

9) $f(x) = x^4 + x^3 - x^2 - 3$

10) $f(x) = -x^4 + x^2 + x + 4$

11) $f(x) = -x^2 - 6x - 4$

- A) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$
- B) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$
- C) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$
- D) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$

12) $f(x) = x^3 - 2x^2 - 1$

- A) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$
- B) $f(x) \rightarrow -\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$
- C) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow +\infty$ as $x \rightarrow +\infty$
- D) $f(x) \rightarrow +\infty$ as $x \rightarrow -\infty$
 $f(x) \rightarrow -\infty$ as $x \rightarrow +\infty$

13) $f(x) = x^5 - 4x^3 + x + 1$

14) $f(x) = x^5 - 3x^3 + x + 3$

15) $f(x) = x^3 - 3x^2 + 3$

16) $f(x) = -x^4 + x^3 + 2x^2 + 2$

17) $f(x) = -x^3 + 3x^2 + 2$

18) $f(x) = -x^2 + 8x - 13$

19) $f(x) = 2x^2 - 16x + 33$

20) $f(x) = -x^4 - 2x^3 + 2x^2 - 7$