

1. The end behavior describes the behavior of a graph as x approaches positive infinity and negative infinity.
2. $h(x) = -3x^4 + 5x^{-1} - 3x^2$; $h(x)$ is the only function that is not a polynomial.
3. polynomial function; $f(x) = 5x^3 - 6x^2 - 3x + 2$; degree: 3 (cubic), leading coefficient: 5
4. polynomial function; $p(x) = 6x^4 - 4x^3 + \frac{1}{2}x^2 + 3x - 1$; degree: 4 (quartic), leading coefficient: 6
5. not a polynomial function
6. polynomial function; $g(x) = 13x^2 - 12x + \sqrt{3}$; degree: 2 (quadratic), leading coefficient: 13
7. polynomial function; $h(x) = -\sqrt{7}x^4 + 8x^3 + \frac{5}{3}x^2 + x - \frac{1}{2}$; degree 4: (quartic), leading coefficient: $-\sqrt{7}$
8. not a polynomial function
9. The function is not in standard form so the wrong term was used to classify the function; f is a polynomial function. The degree is 4 and f is a quartic function. The leading coefficient is -7 .
10. The function is not a polynomial function; f is not a polynomial function. The term $-9\sqrt{x}$ has an exponent that is not a whole number.
11. $h(-2) = -46$
12. $f(-7) = 16,193$
13. $g(8) = -43$
14. $g(-12) = 2101$
15. $p\left(\frac{1}{2}\right) = \frac{45}{4}$
16. $h\left(-\frac{1}{3}\right) = \frac{76}{27}$
17. $h(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ and $h(x) \rightarrow -\infty$ as $x \rightarrow \infty$
18. $g(x) \rightarrow -\infty$ as $x \rightarrow -\infty$ and $g(x) \rightarrow \infty$ as $x \rightarrow \infty$
19. $f(x) \rightarrow \infty$ as $x \rightarrow -\infty$ and $f(x) \rightarrow \infty$ as $x \rightarrow \infty$
20. $f(x) \rightarrow \infty$ as $x \rightarrow -\infty$ and $f(x) \rightarrow -\infty$ as $x \rightarrow \infty$
21. The degree of the function is odd and the leading coefficient is negative.
22. The degree of the function is even and the leading coefficient is positive.