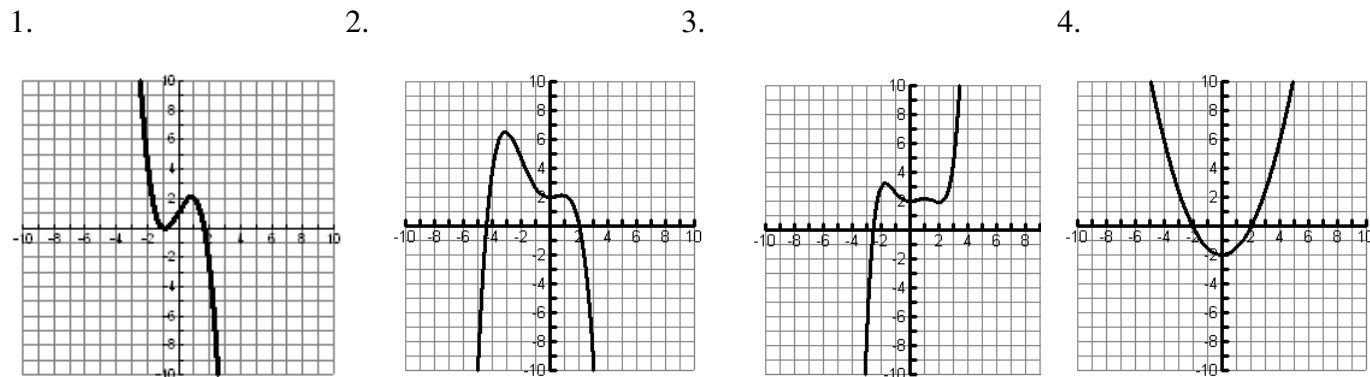


Identify whether the function graphed has an even or odd degree. Then state if the leading coefficient of the polynomial function is positive or negative.



degree _____	degree _____	degree _____	degree _____
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Is the leading coefficient positive or negative?	Is the leading coefficient positive or negative?	Is the leading coefficient positive or negative?	Is the leading coefficient positive or negative?
--	--	--	--

5. **Matching** Use the numbers from the graphs of the problems (#1 - #4) above that have the following end behavior.

- | | |
|---|----------|
| a. $As x \rightarrow -\infty, f(x) \rightarrow -\infty$
$As x \rightarrow +\infty, f(x) \rightarrow +\infty$ | a. _____ |
| b. $As x \rightarrow -\infty, f(x) \rightarrow -\infty$
$As x \rightarrow +\infty, f(x) \rightarrow -\infty$ | b. _____ |
| c. $As x \rightarrow -\infty, f(x) \rightarrow +\infty$
$As x \rightarrow +\infty, f(x) \rightarrow -\infty$ | c. _____ |
| d. $As x \rightarrow -\infty, f(x) \rightarrow +\infty$
$As x \rightarrow +\infty, f(x) \rightarrow +\infty$ | d. _____ |

6. Describe the end behavior of each function by completing the statements.

- | | |
|------------------------------|---|
| a. $f(x) = -3x^6 - 5x^3 - 2$ | a. $As x \rightarrow -\infty, f(x) \rightarrow$ _____
$As x \rightarrow +\infty, f(x) \rightarrow$ _____ |
| b. $f(x) = 2x^3 + 6x^2 + 1$ | b. $As x \rightarrow -\infty, f(x) \rightarrow$ _____
$As x \rightarrow +\infty, f(x) \rightarrow$ _____ |

7. Let $f(x) = x^4 - 2x^3 + 4x - 5$. Write a function g that performs each of the following transformations.

A. Reflect f across the y-axis.

A. _____

B. Reflect f across the x-axis.

B. _____

8. Let $f(x) = x^2 - 2x + 1$. Write the rule for each function

A. $g(x) = f(x) - 4$

A. _____

B. $g(x) = f(x - 4)$

B. _____

Matching Match the description of function g as a transformation of function f .

_____ 9. $g(x) = 5f(x)$

A. Vertical compression

_____ 10. $g(x) = \frac{1}{5}f(x)$

B. Horizontal compression

_____ 11. $g(x) = f(5x)$

C. Vertical stretch

_____ 12. $g(x) = f\left(\frac{1}{5}x\right)$

D. Horizontal stretch

13. Find the local maximum and local minimum for $f(x) = -3x^3 + 4x - 5$.

Round to the nearest tenth.

Max _____

Min _____