

Determine the maximum number of roots each function has.

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

2.  $f(x) = x^3 + 5x^2 + 2x - 8$

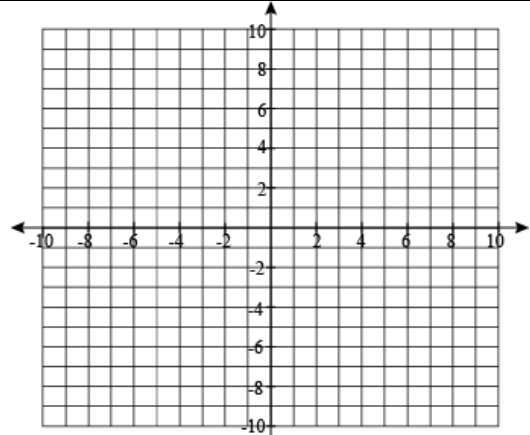
Determine the maximum number of turns each function has.

3.  $f(x) = 6x^4 + 8x + 4x + 2$

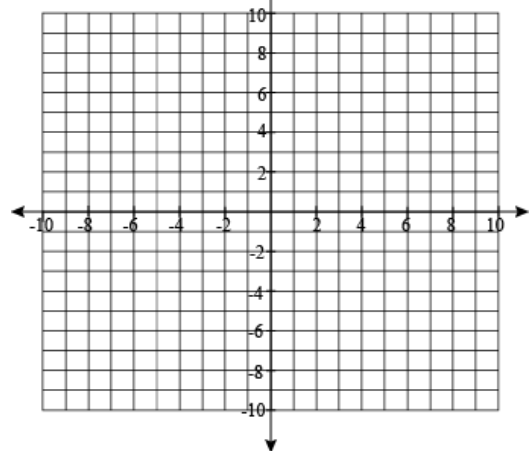
4.  $f(x) = 3x^5 - 4x^3 + 8x + 7$

Sketch the possible graph for the polynomial. State whether it is an odd or even polynomial.

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



6.  $g(x) = x(x - 2)(x + 4)$



Determine whether the given x value is a root to the function.

7.  $f(x) = x^2 + 8x + 10$ ;  $x = 2$

8.  $g(x) = 3x^5 - 4x^3 + 8x + 7$ ;  $x = 1$

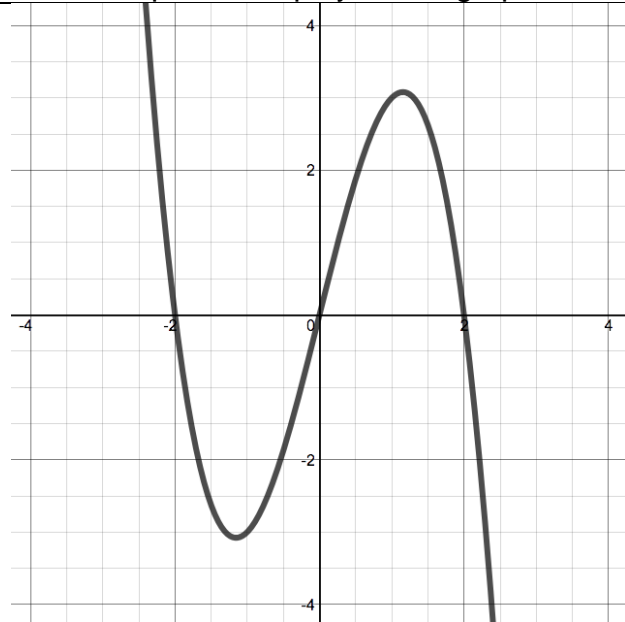
Write the simplest polynomial function with the given zeros.

9.  $-2, 1, \text{ and } 5$

10.  $-2,5 - 2i$

11.  $5, \sqrt{3}$

Label the parts of a polynomial graph.



12.

Domain:

Range:

Interval of Increase:

Interval of Decrease:

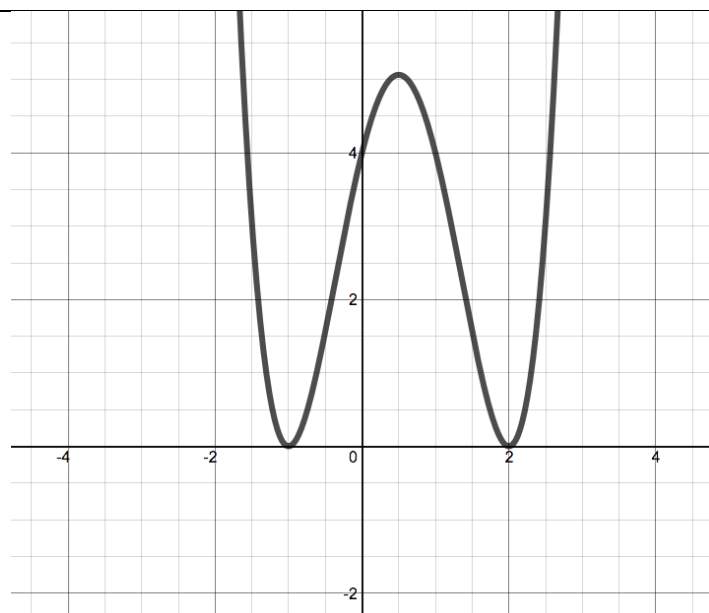
Max (local or absolute):

Minimum (local or absolute):

x-intercepts:

y-intercepts:

end behavior:



13.

Domain:

Range:

Interval of Increase:

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Max (local or absolute):

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x-intercepts:

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