

11-23-15

Analyzing Polynomials

Write an equation for a polynomial with the given solutions.

#1 -1, 2, -4 $(x+1)(x-2)(x+4)$
 $x^2+4x-2x-8$
 $(x+1)(x^2+2x-8)$
 $x^3+2x^2-8x-1x^2+2x-8$
 x^3+3x^2-6x-8

#2 $0, -2, \frac{2}{3}$
 $(x-0)(x+2)(3x-2)$
 $x(x+2)(3x-2)$
 $3x^2-2x-4$
 $x(3x^2+4x-4)$
 $3x^3+4x^2-4x$

Nov 20-9:13 AM

Dec 4-8:46 PM

Number of Real Roots

Graph your equation and see how many times it touches/crosses the x-axis

How many real roots does each polynomial have?

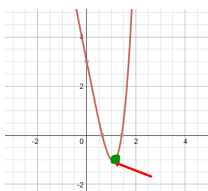
#3 $f(x) = x^4 - 3x^3 + 5x^2 - 27x - 36$
 2

#4 $f(x) = x^3 - 6x^2 + 11x - 6$
 3

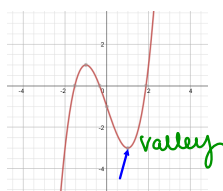
#5 $f(x) = x^4 - 81$
 2

Dec 4-8:53 PM

Absolute Min vs. Relative Min



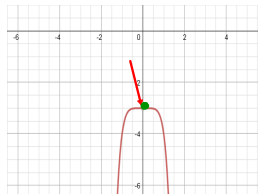
An **absolute minimum** is the minimum of the entire graph.
 Lowest Pt.



A **relative minimum** is the minimum of part of the graph.

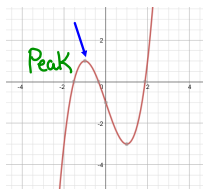
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Absolute Max vs. Relative Max



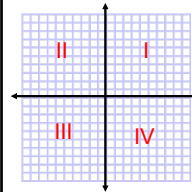
An absolute maximum is the maximum of the entire graph.

Highest!!



A relative maximum is the maximum of part of the graph.

Quadrants Primarily Increasing/Decreasing

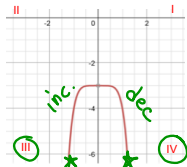


- * Look only at the ends. (Find the Quadrants where the ends are)
- * Trace your graph from left to right, like domain.
 - If it goes up, you're increasing.
 - If it goes down, you're decreasing.

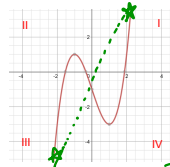
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Nov 20-2:38 PM

- * Look only at the ends. (Find the quadrants where the ends are)
- * Trace your graph from left to right, like domain.
 - If it goes up, you're increasing.
 - If it goes down, you're decreasing.

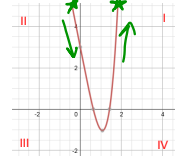


#6 primarily inc: III
primarily dec: IV

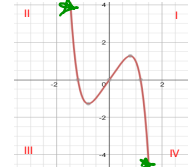


#7 primarily inc: I + III
primarily dec: none

- * Look only at the ends. (Find the quadrants where the ends are)
- * Trace your graph from left to right, like domain.
 - If it goes up, you're increasing.
 - If it goes down, you're decreasing.



#8 primarily inc: I
primarily dec: II



#9 primarily inc: none
primarily dec: II and IV

Nov 19-1:19 PM

Nov 17-3:16 PM

#10 $f(x) = x^2 - x - 6$

Degree: 2

Number of Real Zeros: 2

X-Intercept(s): $(-2, 0)(3, 0)$

Y-Intercept: $(0, -6)$

Absolute Min: $(.5, -6.25)$

Quadrants Primarily ...

Increasing: I

Decreasing: II

Domain (int): $(-\infty, \infty)$

Dec 4-8:57 PM

#11 $f(x) = -x^2 + 7x - 6$

Degree:

Number of Real Zeros:

X-Intercept(s):

Y-Intercept:

Absolute Max:

Quadrants Primarily ...

Increasing:

Decreasing:

Domain (alg):

Dec 4-8:57 PM

#12 $f(x) = x^3 + 2x^2 - 11x - 12$

Degree: 3

Number of Real Zeros: 3

X-Intercept(s): $(-4, 0)(3, 0)(-1, 0)$

Y-Intercept: $(0, -12)$

Relative Max: $(-2.69, 12.60)$

Relative Min: $(1.36, -20.75)$

Quadrants Primarily ...

Increasing: I + III

Decreasing: none

Domain (int): $(-\infty, \infty)$

Dec 4-8:57 PM

#13 $f(x) = x^4 + 2x^3 - 13x^2 - 14x + 24$

Degree:

Number of Real Zeros:

X-Intercept(s):

Y-Intercept:

Relative Max:

Relative Min:

Quadrants Primarily ...

Increasing:

Decreasing:

Domain (alg):

Dec 4-8:57 PM

#14

What do you notice about the degree and number of real zeros?

- 10. degree: 2; number of real zeros: 2
- 11. degree: 2; number of real zeros: 2
- 12. degree: 3; number of real zeros: 3
- 13. degree: 4; number of real zeros: 4

Your assignment is on the back...

Nov 17-10:17 AM

Nov 24-8:27 AM

Nov 19-1:23 PM