



Math Virtual Learning

Algebra 2A

Polynomial Parent Functions

May 18, 2020



Lesson:
Sketching Polynomial Parent Functions

Learning Target:

LT C2 I can identify key features (zeros, multiplicity, end behavior, y-intercept, local minimums and maximums, turning points, transformations).

Objective:

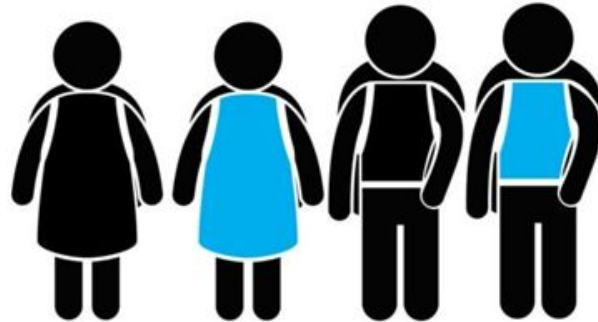
Students will be able to identify parts of a graph.

Warm Up

Fourteen of the kids in the class are girls. Eight of the kids wear blue shirts. Two of the kids are neither girls or wear a blue shirt. If five of the kids are girls who wear blue shirts, how many kids are in the class?

Question

#17



Warm Up Answer

Answer: 19

Lesson

We are going to start looking at graphing polynomials from looking at the equations.

Polynomial Degree and Leading Coefficient:

<https://www.youtube.com/watch?v=nqiXaV5sioq>

Graphing Polynomials: <https://www.youtube.com/watch?v=b1u6DM2UhZ8>

Practice

Match each equation with one of the graphs given.

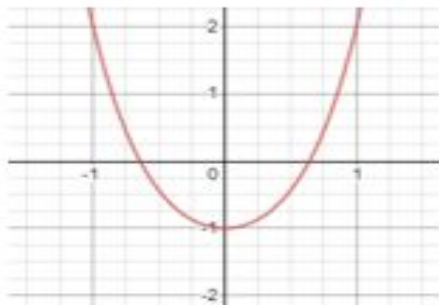
1 $y = x^4 + 2x^2 - 1$

2 $y = -x^3 + 2x^2 + 1$

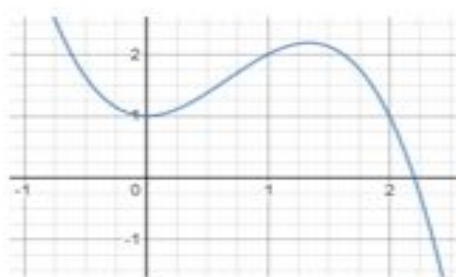
3 $y = -x^4 + x + 2$

4 $y = x^5 + 2x^2 - 1$

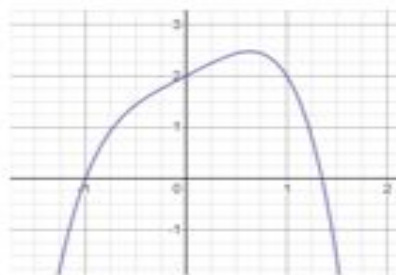
a.



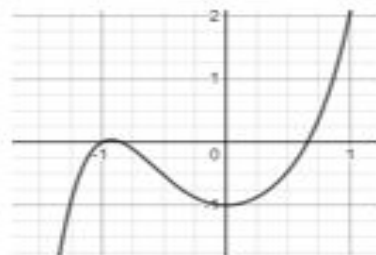
b.



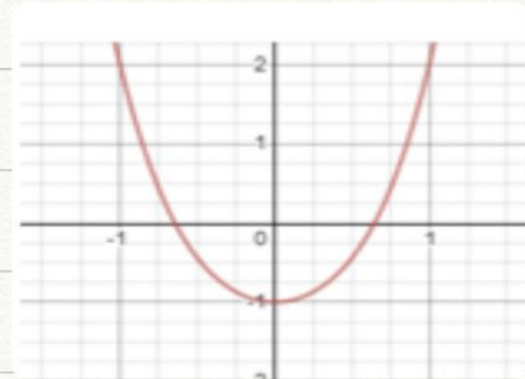
c.



d.



1. $y = x^4 + 2x^2 - 1$



Degree = 4 (even)

Leading Coefficient = 1 (positive)

End Behavior: $x \rightarrow \infty, f(x) \rightarrow \infty$

$x \rightarrow -\infty, f(x) \rightarrow \infty$

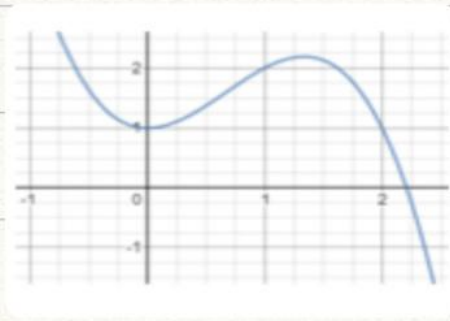
2. $y = -x^3 + 2x^2 + 1$

Degree: 3 (odd)

Leading Coefficient: -1 (neg)

End Behavior: $x \rightarrow \infty, f(x) \rightarrow -\infty$

$x \rightarrow -\infty, f(x) \rightarrow \infty$



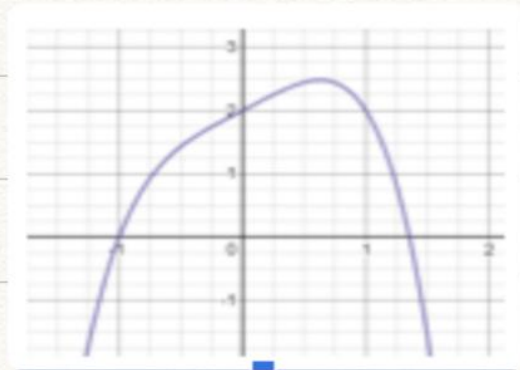
$$3. y = -x^4 + x + 2$$

Degree: 4 (even)

Leading Coefficient: -1 (neg)

End Behavior: $x \rightarrow \infty, f(x) \rightarrow -\infty$

$x \rightarrow -\infty, f(x) \rightarrow -\infty$



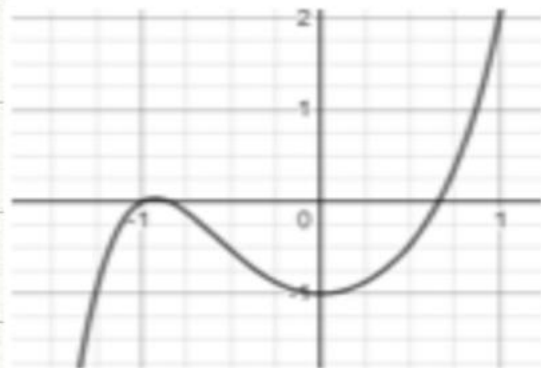
4. $y = x^5 + 2x^2 - 1$

Degree: 5 (odd)

Leading Coefficient: 1 (pos)

End Behavior: $x \rightarrow \infty, f(x) \rightarrow \infty$

$x \rightarrow -\infty, f(x) \rightarrow -\infty$



Additional Practice

Use the Following link for additional practice.

<https://www.cravenk12.org/cms/lib/NC02214561/Centricity/Domain/1711/U1L5%20Worksheet.pdf>