Bell Work
Please get a "Daily Review" book from the tub on the front table.
Put your name on the BACK of the booklet!!!
Open the booklet to page 5
Work the problems on pages 5, 7, & 9.

Bell Work
Factor the following quartic trinomial and find the zeros.
\[ y = x^4 - 13x^2 + 36 \]

Chapter 5 Polynomials
Copy the vocabulary words and then match them to the expressions. (page 280)

- monomial: \[ x^3 + 6x - 9 \]
- binomial: \[ 5x^2 - x^2 + 8x - 12 \]
- trinomial: \[ x^2 + 3 \]
- polynomial: \[ y^4 \]
- degree of a polynomial: \[ 10x + 4 \]
- standard form of a polynomial function: \[ 10x^2 \]

Classifying Polynomials
Classify by the degree and the number of terms. Write in standard form first.

Use the table on page 281 for help with the Names Using Degree.
1) \[ 3x^3 - x + 5x^4 \]
2) \[ 3 - 4x^5 + 2x^2 + 10x \]
3) \[ 6x^4 - 5x^3 - x^2 + 8x - 12 \]
4) \[ 5 \]
5) \[ 6x^2 + 5x \]

Turning Points and End Behavior
The degree of a polynomial function affects the shape of its graph and it determines the maximum number of turning points.

- turning points - where the graph changes direction

The degree of a polynomial also affects the end behavior of its graph.

- end behavior - the directions of the graph to the far left and to the far right.

Four types of end behavior (page 282)

- up and up: \[ y = x^4 - 13x^2 + 36 \]
- down and up: \[ y = x^3 + 3 \]
- down and down: \[ y = -x^3 + 5x \]
- up and down: \[ y = -x^3 + 2x \]

In General - there are at most n-1 turning points

- Odd degree - even number of turning points
- Even degree - odd number of turning points
Lesson 5.1

Graphing Cubic Functions

Graph: \( y = x^3 + 1 \)

Step 1: Build a table of values

Step 2: Plot the values on a coordinate plane

Step 3: Describe the end behavior

Graph: \( y = \frac{1}{2}x^3 \)

Step 1: Build a table of values

Step 2: Plot the values on a coordinate plane

Step 3: Describe the end behavior

Graph: \( y = 3x - x^3 \)

Step 1: Build a table of values

Step 2: Plot the values on a coordinate plane

Step 3: Describe the end behavior

Class work:

Pg 285 8-30 evens

Homework:

4 graphing problems
1) \( y = 2x^2 - x^3 \) 1) write in standard form
2) \( y = -x^3 + 5x \) 2) table
3) \( y = x^3 - 4x^2 \) 3) graph
4) \( y = x + x^3 \) 4) end behavior

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