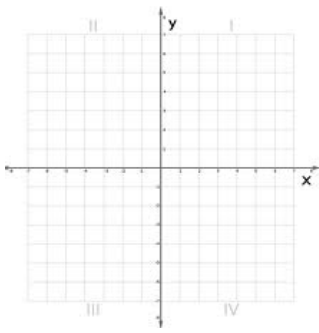
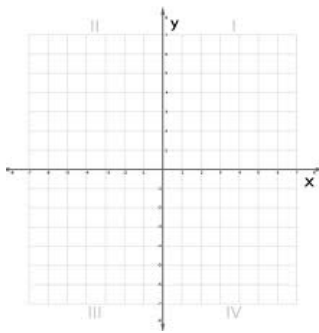
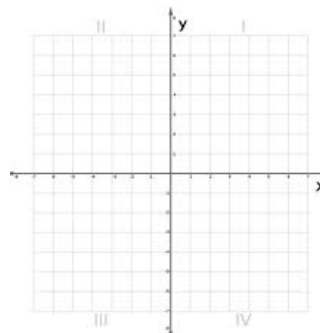


Math 30-2
Unit 5: Polynomial Functions
Assessment for Learning Questions

Unit 5 Lesson 1: Exploring the Graphs of Polynomial Functions -- (It is extremely important that you read the notes in lesson 1 to review concepts needed to work through these investigations)

1. Investigating the Graphs of Constant Functions

Use technology to graph the constant functions below. Determine the following characteristics for each function and complete the chart. From the answers in the chart, fill in the blanks to summarize your findings.

Function	$f(x) = 3$	$f(x) = 0$	$f(x) = -4$
Graph of Function			
Number of x-intercepts			
y-intercept			
End Behavior			
Domain			
Range			
Number of Turning Points			

Notes:

- Constant functions have _____ x-intercepts. There is one case where every point is on the x-axis. This happens at _____.
- Constant functions have _____ y-intercepts.
- The End Behavior of Constant functions can be described as _____.
- _____.
- Domain: _____. Range: _____.
- Number of Turning Points _____.

2. Investigating the Graphs of Linear Functions

Use technology to graph the linear functions below. Determine the following characteristics for each function and complete the chart. From the answers in the chart, fill in the blanks to summarize your findings.

Function	$f(x) = 3x + 1$	$f(x) = -2x + 3$	$f(x) = 1/2x - 4$
Graph of Function			
Number of x-intercepts			
y-intercept			
End Behavior			
Domain			
Range			
Number of Turning Points			

Notes:

- Linear functions have _____ x-intercepts.
- Linear functions have _____ y-intercepts.
- The End Behavior of Linear functions can be described as
- _____.
- Domain: _____ Range: _____.
- Number of Turning Points _____.

3. Investigating the Graphs of Quadratic Functions

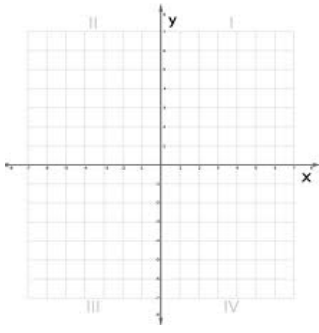
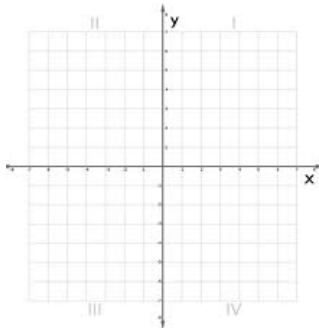
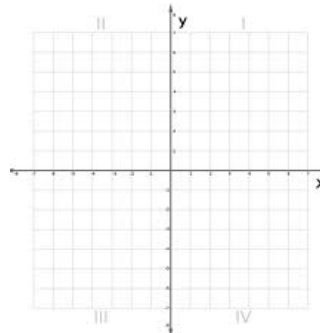
Use technology to graph the quadratic functions below. Determine the following characteristics for each function and complete the chart. From the answers in the chart, fill in the blanks to summarize your findings.

Function	$f(x) = x^2 + 2x + 1$	$f(x) = x^2 + 5x + 6$	$f(x) = -x^2 - 1$
Graph of Function			
Number of x-intercepts			
y-intercept			
End Behavior			
Domain			
Range			
Number of Turning Points			

Notes:

- Quadratic functions have _____, _____, or _____ x-intercepts.
- Quadratic functions have _____ y-intercepts.
- The End Behavior of Quadratic functions can be described as
- _____.
- Domain: _____.
- If graph opens up then the Range: _____.
- If graph opens down then the Range: _____.
- Number of Turning Points _____.

4. Investigating the Graphs of Cubic Functions

Function	$f(x) = -x^3 - x^2 + 6x$	$f(x) = x^3 - 3x - 2$	$f(x) = x^3 + x^2 + x + 1$
Graph of Function			
Number of x-intercepts			
y-intercept			
End Behavior			
Domain			
Range			
Number of Turning Points			

Notes:

- Cubic functions have _____, _____, or _____ x-intercepts.
- Cubic functions have _____ y-intercepts.
- The End Behavior of Cubic functions can be described as
- _____.
- Domain: _____.
- Range: _____.
- Number of Turning Points _____.

Please check your answers to the Notes section with the chart on Page 276 of your textbook.

Complete Workbook Question: Page 117 #1