

Today's Learning Goal(s):

By the end of the class, I will be able to:

- a) understand end behaviours, domain, range, sign of the leading coefficient, and maximum number of zeros for cubic and quartic functions.

Don't forget PPT 2.3.1

Cubic and Quartic Functions 2.3.1: True or False?

Date: Sept-27/18

Read each of the following statements and circle True or False below.

- | | |
|--|---|
| 1. A degree of four is the highest degree that a cubic function can have. | True <input type="radio"/> False <input checked="" type="radio"/> |
| 2. A cubic function has to have at least one x -intercept. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 3. The leading coefficient for the function $2x^3 - 5x^2 + 10x + 3$ is $2x^3$. | True <input type="radio"/> False <input checked="" type="radio"/> |
| 4. The domain and range for all quartic functions will never be restricted. | True <input type="radio"/> False <input checked="" type="radio"/> |
| 5. The domain and range for all cubic functions will never be restricted. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 6. A quartic function can have three x -intercepts. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 7. A cubic function can have four x -intercepts. | True <input type="radio"/> False <input checked="" type="radio"/> |
| 8. A quartic function can resemble a quadratic function when graphed. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 9. Sometimes a quartic relation is not a function. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 10. As $x \rightarrow \infty, y \rightarrow -\infty$ and $x \rightarrow -\infty, y \rightarrow -\infty$ means the graph is starting on the left in quadrant 3 and ending on the right in quadrant 4. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 11. The leading coefficient does not influence the graph of a quartic function. | True <input type="radio"/> False <input checked="" type="radio"/> |
| 12. The x -intercepts do not change when the graph is reflected on the x -axis. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 13. The function $y = (x - 3)^2(x + 1)$ would have two x -intercepts. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 14. The function $y = (x - 2)(x - 2)(x - 2)$ would have three x -intercepts. | True <input type="radio"/> False <input checked="" type="radio"/> |
| 15. The function $y = (x + 4)^2(x - 4)^2$ would create a "W" shape. | True <input checked="" type="radio"/> False <input type="radio"/> |
| 16. The end behaviour for the function $y = -x^4 + 2x^3 - x^2 + 3x - 10$ would be as $x \rightarrow \infty, y \rightarrow \infty$ and $x \rightarrow -\infty, y \rightarrow \infty$. | True <input type="radio"/> False <input checked="" type="radio"/> |

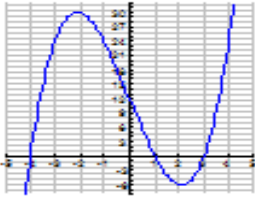
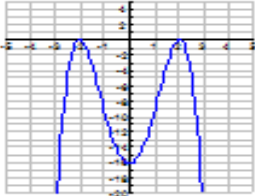
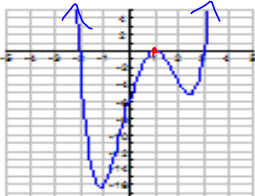


Note: 13 = True
14 = False

2.3.3: Properties of Cubic and Quartic Functions

Date: Sept-27/18

1. Based on the graphs given, complete the chart.

	Sign of Leading Coefficient	Number of x -intercepts	End Behaviour	Domain	Range	Type of Function Cubic or Quartic?
						
						
	+ve	3	$\infty x \rightarrow \infty, y \rightarrow \infty$ $x \rightarrow -\infty, y \rightarrow \infty$	$\{x \in \mathbb{R}\}$	$\{y \in \mathbb{R} / y \geq -16\}$	Quartic
