**5.8 Polynomial Models in the Real World**

Objectives: To fit data to linear, quadratic, cubic, or quartic models.

Remember from the first section the types of functions.

**Common Types of Polynomial Functions**

|  |  |
| --- | --- |
| **Degree** | **Type** |
| 0 | *Constant* |
| 1 | *Linear* |
| 2 | *Quadratic* |
| 3 | *Cubic* |
| 4 | *Quartic* |

Key Concept: **The (n+1) Point Principle**

For any set of n+1 points in the coordinate plane that pass the vertical line test, there is a unique polynomial of degree at most n that fits the points perfectly.

In other words, this principle confirms that two points can make a line, three points (not on a line) make a parabola, four points (not on a line, or parabola) determine a cubic and so forth…

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