**3.4 Polynomial Functions: Graphs, Applications, and Models**

**CLASSROOM EXAMPLE 1 Examining Vertical and Horizontal Translations**

Graph each polynomial function. Determine the largest open intervals of the domain over which each function is increasing or decreasing.

|  |  |
| --- | --- |
| **(a)**  Dotted_grid_full_10_X_10 | **(b)**  Dotted_grid_full_10_X_10 |

|  |  |
| --- | --- |
| **(c)**  Dotted_grid_full_10_X_10 |  |

**CLASSROOM EXAMPLE 2 Determining End Behavior**

Use the symbols for end behavior to describe the end behavior of the graph of each function.

**(a)  (b) **

**(c)  (d) **

**CLASSROOM EXAMPLE 3 Graphing a Polynomial Function**

|  |  |
| --- | --- |
|  |  |
| Dotted_grid_full_10_X_10 | Dotted_grid_full_10_X_10 |

**Approximations of Real Zeros**

**CLASSROOM EXAMPLE 7 Approximating Real Zeros of a Polynomial Function**

Approximate the real zeros of 