

## 2.2 Polynomial Functions of Higher Degree

Name:

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**P 45.** Graph

$$g(t) = t^5 - 6t^3 + 9t.$$

Find all real zeros and their multiplicities. Find the  $y$ -intercept, if any. Determine the number of turning points. Determine the end-behavior. Include a table of “nice” values for which to evaluate  $g$  and the corresponding values of  $g$ .

**P 48.** Graph

$$f(x) = 2x^4 - 2x^2 - 40.$$

Find all real zeros and their multiplicities. Find the  $y$ -intercept, if any. Determine the number of turning points. Determine the end-behavior. Include a table of “nice” values for which to evaluate  $f$  and the corresponding values of  $f$ .

**P 49.** Graph

$$g(x) = x^3 + 3x^2 - 4x - 12.$$

Find all real zeros and their multiplicities. Find the  $y$ -intercept, if any. Determine the number of turning points. Determine the end-behavior. Include a table of “nice” values for which to evaluate  $g$  and the corresponding values of  $g$ .

**P 50.** Graph

$$f(x) = x^3 - 4x^2 - 25x + 100.$$

Find all real zeros and their multiplicities. Find the  $y$ -intercept, if any. Determine the number of turning points. Determine the end-behavior. Include a table of “nice” values for which to evaluate  $g$  and the corresponding values of  $f$ .

**P 62.** Find a polynomial function that has zeros

$$x = -2, -1, 0, 1, 2.$$

**P 64.** Find a polynomial function that has zeros

$$x = 2, 4 + \sqrt{5}, 4 - \sqrt{5}.$$

**P 74.** Find a polynomial of degree 5 that has zeros

$$x = -1, 4, 7, 8.$$