

Polynomial Functions and Their
Graphs

1. Determine which functions are polynomial functions. For those that are, identify the degree:
(Similar to p.338 #1-10)

$$f(x) = 5x^3 - 7x^2$$

2. Determine which functions are polynomial functions. For those that are, identify the degree:
(Similar to p.338 #1-10)

$$h(x) = 5x^3 - 3x^2 - \frac{5}{x}$$

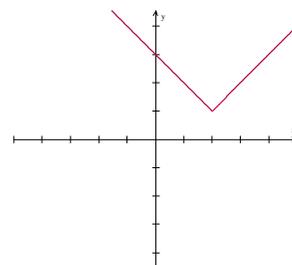
3. Determine which functions are polynomial functions. For those that are, identify the degree:
(Similar to p.338 #1-10)

$$f(x) = x^{\frac{1}{5}} - x^2 + 1$$

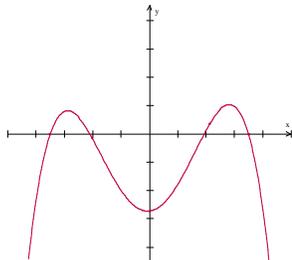
4. Determine which functions are polynomial functions. For those that are, identify the degree:
(Similar to p.338 #1-10)

$$f(x) = \frac{4x^2 - 2}{5}$$

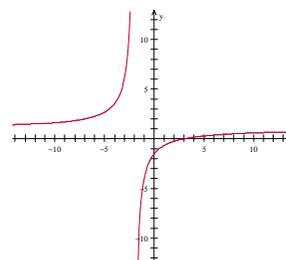
5. Identify which graphs are not those of polynomial functions:
(Similar to p.338 #11-14)



6. Identify which graphs are not those of polynomial functions:
(Similar to p.338 #11-14)

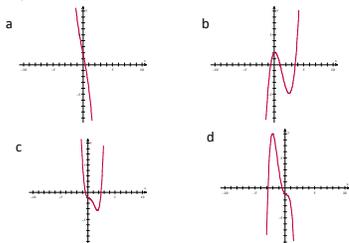


7. Identify which graphs are not those of polynomial functions:
(Similar to p.338 #11-14)



8. Use the Leading Coefficient Test to determine the end behavior of the graph and then match it to the graphs below: (Similar to p.338 #15-18)

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



9. Use the Leading Coefficient Test to determine the end behavior of the graph of the polynomial function:
(Similar to p.338 #19-24)

$$f(x) = -5x^3 - x^2 - 5x - 2$$

10. Find the zeros for each polynomial function and give the multiplicity for each zero. State whether the graph crosses the x-axis, or touches the x-axis and turns around, at each zero :
(Similar to p.338 #25-32)

$$f(x) = 2(x - 3)(x + 1)^2$$

11. Find the zeros for each polynomial function and give the multiplicity for each zero. State whether the graph crosses the x-axis, , or touches the x-axis and turns around, at each zero :
(Similar to p.338 #25-32)

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

12. Graph:
(Similar to p.338 #41-64)

$$f(x) = x^4 + x^3 - 6x^2$$