

Review 2.1-2.3

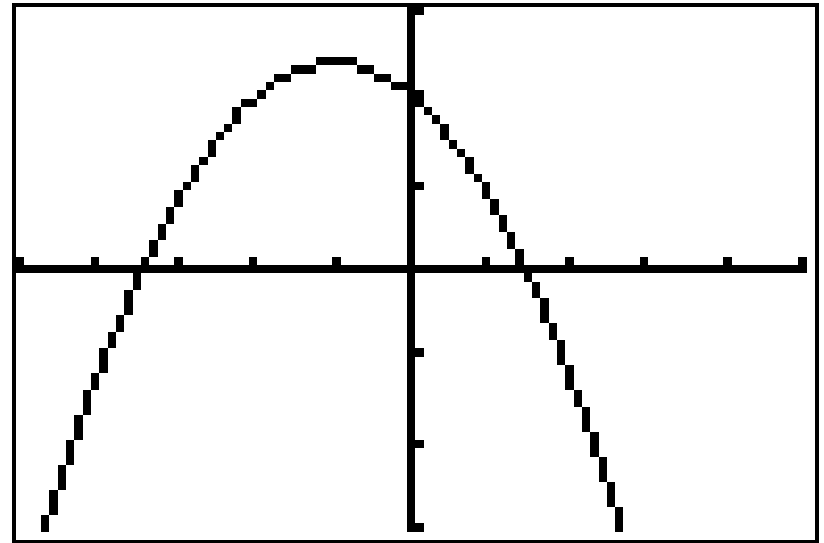
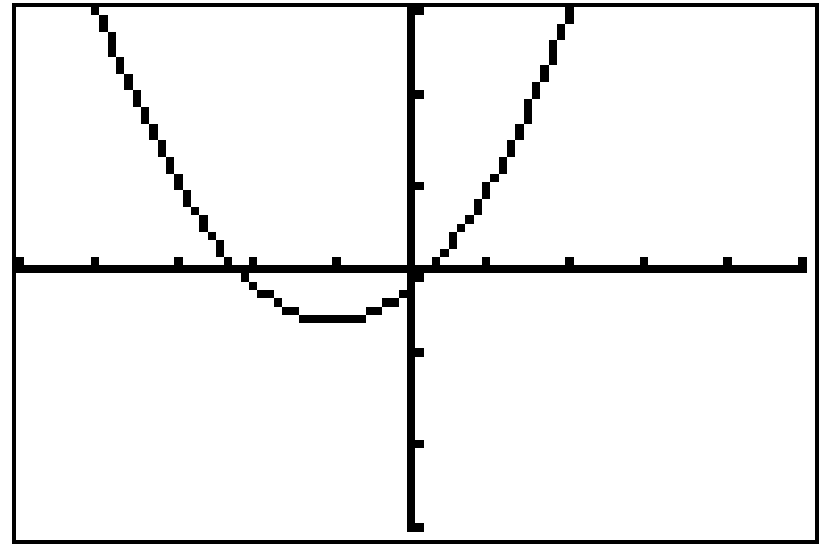
Write an equation for the linear function f satisfying the given conditions.

$$f(-5) = -1 \quad \text{and} \quad f(2) = 4$$

Match the graph with the function

1) $f(x) = 12 - 2(x + 1)^2$

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



Find the vertex and axis of symmetry.

$$f(x) = 3(x - 1)^2 + 5$$

Rewrite the function in vertex form by completing the square. Then find the vertex and axis of symmetry. Then find the x-intercepts using the quadratic formula.

$$f(x) = -3x^2 + 6x - 5$$

Find the vertex of the function without completing the square. Write the function in vertex form and give the axis of symmetry. Use vertex form to find the x intercepts.

$$f(x) = 2x^2 + 8x - 3$$

Write an equation for the quadratic function whose graph contains the given vertex and point.

Vertex $(-2, -5)$ Point $(-4, -27)$

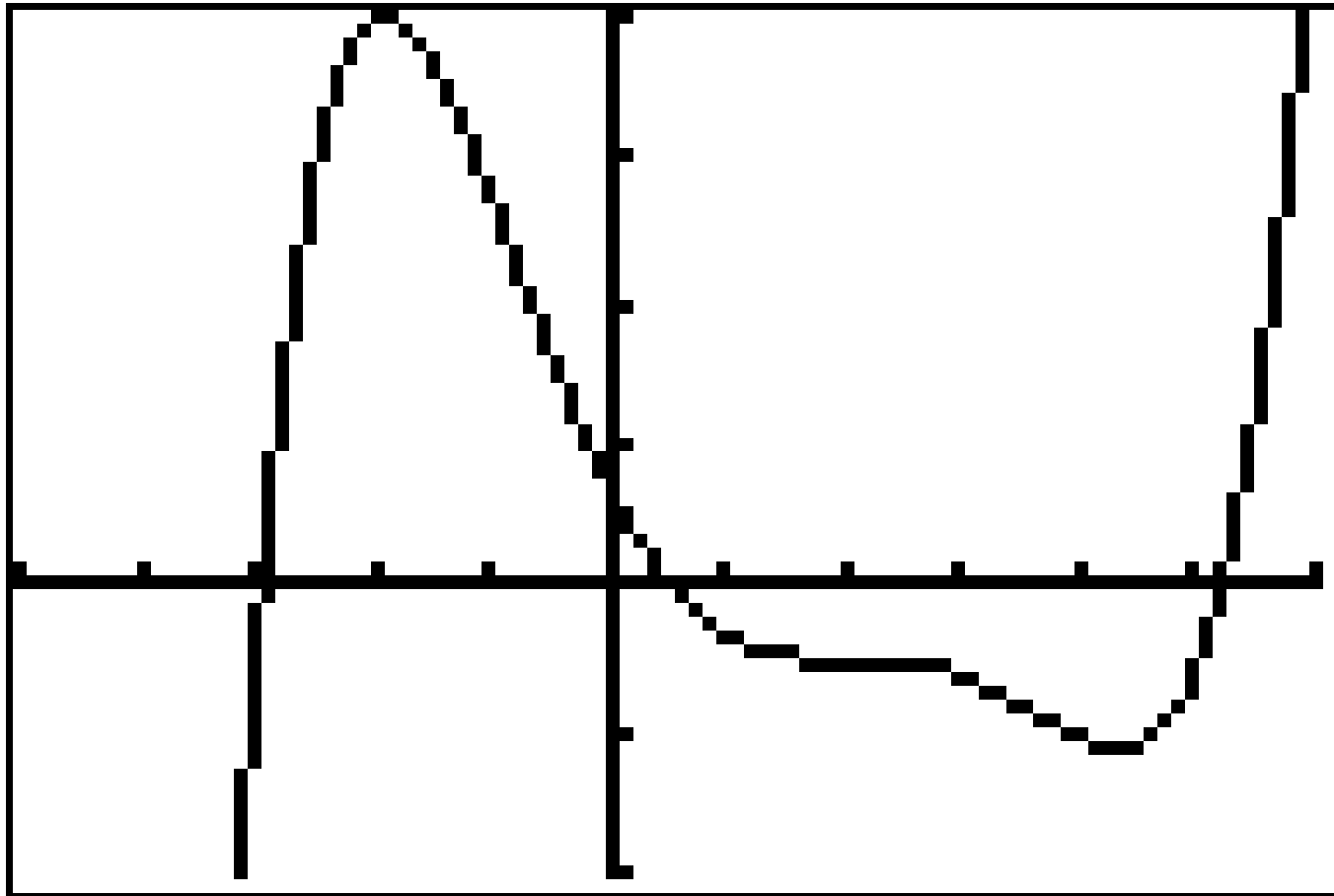
Analyze the function $y = 2x^4$

- 1) Determine the domain and range
- 2) Is the function even, odd
- 3) Intervals of Increase or Decrease
- 4) Find any extrema
- 5) Determine the end behavior
- 6) Find any asymptotes
- 7) Intervals of Concavity

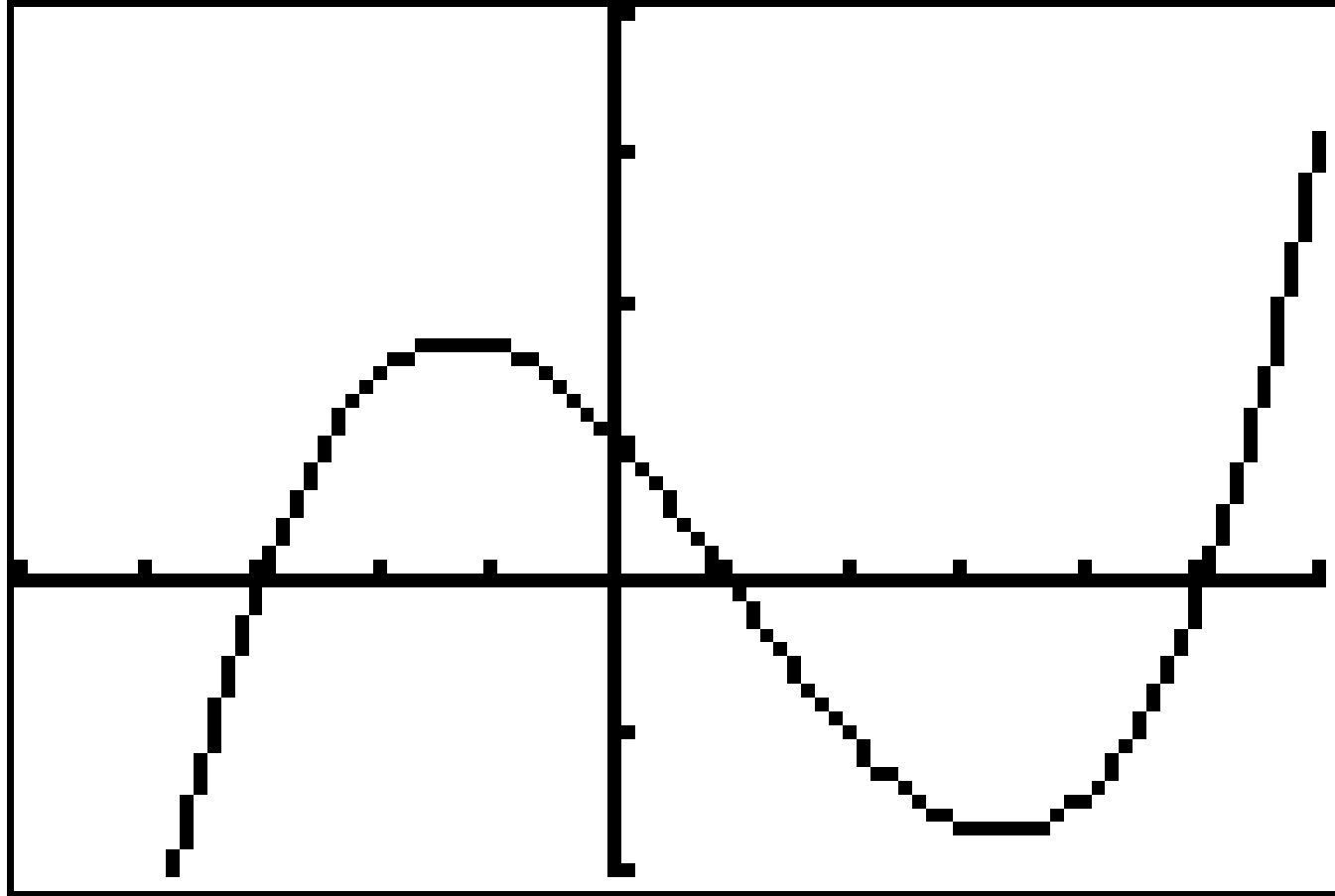
Describe how to transform the graph of $y = x^3$ into the function given

$$g(x) = \frac{3}{4}(x-3)^3 + 1$$

For each graph find a) the zeros b) intervals of concavity
c) the degree of the polynomial



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c) the degree of the polynomial



Describe the end behavior of the polynomial function.

$$f(x) = -x^3 + 7x^2 - 4x + 3$$

Find the zeros of the function algebraically

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

State the degree and list the zeros of the polynomial function. Then state the multiplicity of each zero and whether the graph **crosses** the x-axis at the corresponding x-intercept.

$$f(x) = 7x(x - 3)^2(x + 5)^4$$

Using Algebra, find a cubic function with the given zeros.

2, - 5, 3