

Review 2.1-2.3

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

$$f(-6) = -2 \quad \text{and} \quad f(4) = 5$$

Find the vertex and axis of symmetry.

$$f(x) = 8(x - 5)^2 + 1$$

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

Vertex $(-3, -7)$ Point $(1, 2)$

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

$$f(x) = -4x^2 + 8x + 5$$

Rewrite the function in vertex form ***without*** completing the square. Then find the vertex and axis of symmetry. Then find the x-intercepts of the graph using the vertex form of the equation.

$$f(x) = -4x^2 + 8x + 5$$

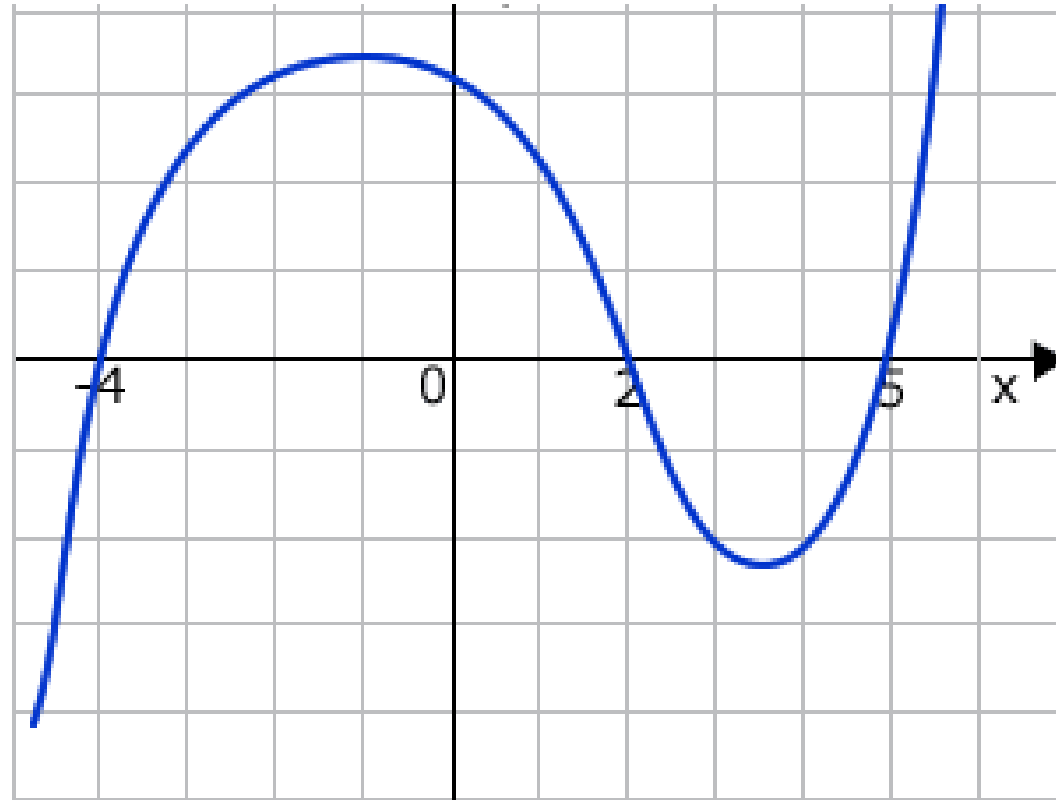
Analyze the function $y = x^{4/3}$

- 1) Determine the domain and range or undefined for $x < 0$
- 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.
Then find the y-intercept of the graph.

$$g(x) = \frac{4}{3}(x - 2)^3 + 3$$

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.

$$f(x) = 2x^2 + 8x^3 - 5x + 1$$

Find the zeros of the function algebraically

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

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.

$$f(x) = 5x(x - 2)^3(x + 1)^4$$

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

4, - 1, 2