

1. Determine if the function is a polynomial. If it is state the degree and leading coefficient.

$$f(x) = 4x^3 - x^{\frac{1}{5}}$$

$$f(x) = \sqrt{4x^4 + x^2}$$

2. Write an equation for the linear function f satisfying the given conditions. Graph $y=f(x)$.

$$f(-3) = 5 \quad \text{and} \quad f(6) = -2$$

3. Find the vertex and axis of the graph of the function.

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

4. Find the vertex and axis of the graph of the function.

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