Warm-Up

Write the equation of a linear function given $f(3)=2$ and $f(-1)=4$

$(3,2)$ $(-1,4)$

x_1, y_1 x_2, y_2

$y = mx + b$

$m = -\frac{1}{2}$

$m = \frac{y_2 - y_1}{x_2 - x_1}$

$y = -\frac{1}{2}x + 3.5$

Chapter 2A

Learning Target 5

I can write a polynomial function of minimum degree in standard form with given zeros and multiplicities.

Write a polynomial function of minimum degree in standard form with given zeros and multiplicities.

1.) 5 multiplicity of 1, 2 multiplicity of 2

$x = 5$ $x = 2$ $x = 2$

$-5 \quad -5$

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

$= (x^2 - 2x - 5x + 10)(x-2)$

$= (x^2 - 7x + 10)(x-2)$

$= x^3 - 2x^2 - 7x^2 + 14x + 10x - 20$

$= x^3 - 9x^2 + 24x - 20$

Write a polynomial function of minimum degree in standard form with given zeros and multiplicities.

2.) -1; 0 multiplicity of 2

$x = -1$ $x = 0$ $x = 0$

$f(x) = (x+1)(x)(x)$

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

$= x^3 + x^2$

Review

Write a quadratic function in vertex form given the vertex and a point on the graph.

3.) vertex (1, -2), passing through (4, 5)

h k x y

$y = a(x-h)^2 + k$

$5 = a(4-1)^2 - 2$

$5 = a(3)^2 - 2$

$5 = a(9) - 2$

$7 = a(9)$

$7/9 = a$

$y = \frac{7}{9}(x-1)^2 - 2$