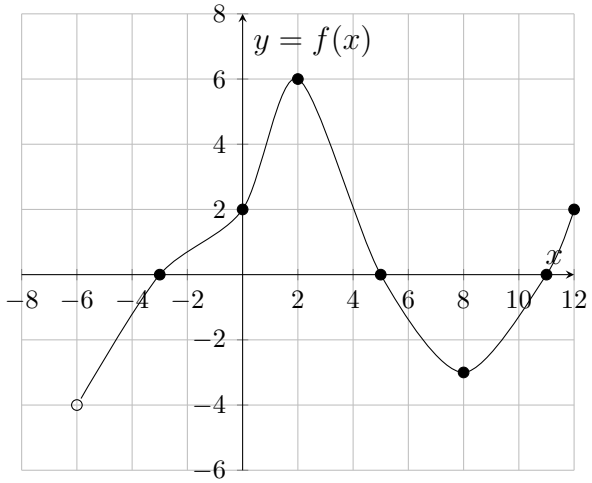
Name _____

Homework 2
Sections 1.1 & 1.2

1. (6) Given the function $f(x) = x^2 - 3x + 5$, compute and simplify $\dfrac{f(x+2) - f(x)}{2}$

2. (11) Use the graph of the function $y = f(x)$ shown below to determine the following:



(a) $f(-3) =$ $f(0) =$

(b) What is/are the zero(s) of $f(x)$?

(c) On what open interval(s) is $f(x)$ decreasing?

(d) On what interval(s) is $f(x)$ positive?

(e) What is the domain of $f(x)$?

What is the range of $f(x)$?

3. (1ea) Match each of the following functions with it's (entire) domain.

_____ $f(x) = \sqrt{2x-4}$

_____ $g(x) = \dfrac{x+2}{6x-12}$

_____ $h(x) = \dfrac{x}{\sqrt{x-2}}$

_____ $k(x) = \dfrac{\sqrt{x}}{x-2}$

(A) $(-\infty, 2) \cup (2, \infty)$

(B) $(-2, 2)$

(C) $[0, \infty)$

(D) $[0, 2) \cup (2, \infty)$

(E) $[2, \infty)$

(F) $(2, \infty)$

(G) $(-\infty, \infty)$

(H) $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$