Name _____

Homework 8
Sections 3.1 & 3.2

1. (2ea) Evaluate and simplify (with no compound fractions) each of the following expressions, given the function $T(x) = \dfrac{x+1}{2x}$.

   (a) $T(3)$

   (b) $T(x+1)$

   (c) $T\left(\frac{x}{2}\right)$

2. (1ea) Match each of the following functions with its (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) $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$

3. (4) Determine the zeros of the function $g(t) = \dfrac{(t^2-6)(3t-2)}{t^2+3t-4}$.

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