Homework 1/30

1. Refer to Problem 1, Section 2.1 of your text.
   
   (a) Compute the rate of change of $f$ on the interval $[2, a]$. Simplify as far as possible.
   (b) Compute the rate of change of $f$ at $x = 2$.
   (c) Compute the rate of change of $f$ on the interval $[a, -1]$. Simplify as far as possible.
   (d) Compute the rate of change of $f$ at $x = -1$.

2. Work Problems 9(a), 11(a) and 15(a) from Section 2.1.

3. Refer to Problem 18, Section 2.1 of your text.
   
   (a) Compute the rate of change of $f$ on the interval $[1, a]$. Simplify as far as possible.
   (b) Compute the rate of change of $f$ at $x = 1$.

4. Refer to Problem 19, Section 2.1 of your text.
   
   (a) Compute the rate of change of $g$ on the interval $[a, 1]$. Simplify as far as possible.
   (b) Compute the rate of change of $f$ at $x = 1$.


Hints and Answers

1. a) $a^2 + 2a + 4$; b) 12; c) $a^2 - a + 1$; d) 1

3. a) $4/(a - 2)$; b) $-4$

4. a) $1/(1 + \sqrt{a})$; b) 1/2