Calculus 2.6 - Derivatives and Rates of Change
Review Problems

1. Evaluating limits.

2. Evaluate the limits (if they exist):

(a) \( \lim_{x \to 3} (3x - 5) = 4 \)  
(b) \( \lim_{x \to -2} \frac{x + 2}{x^2 - 4} = -\frac{1}{4} \)  
(c) \( \lim_{x \to 3} \frac{x^2 - 2x - 3}{x^3 - 9x} = \frac{2}{9} \)

Basic Knowledge

3. \( y = -11x - 23 \)

4. (a) 56 ft/sec  
(b) 4 ft/sec  
(c) 56 ft/sec  
(d) \( a(t) = 32a - 8 \)

Intermediate/Advanced Knowledge

5. (a) \( \frac{1}{11} \) dollars/item  
(b) \( \frac{\sqrt{5}}{20} \) dollars/item

6. 1

7. \( \frac{4e^{\pi/4} - 8}{\pi} \)