

## HOMWORK (winter/spring), Week 2(Answers)

4. Ford Truck:  $y = 50t$ . Slope tells us the speed of the truck in mph. Chevy Truck:  $y = 20t + 40$ . The slope tells us the acceleration of the truck in mph/hr.
5. (a) 2.7183. (b) 7.3890. (c) 0.3679. (d) part (a) is  $e$ , part (b) is  $e^2$ , and part (c) is  $e^{-1}$ .  
 $\lim_{x \rightarrow \infty} (1 + \frac{m}{x})^x = e^m$ .
6. (a) Both limits are  $\infty$ . (b)  $-\infty$ . (c)

$$\left( \frac{(a+h)^2}{a+h-1} - \frac{a^2}{a-1} \right) / h$$

- (d)  $f(h) = \frac{a^2-2a+ah-h}{(a+h-1)(a-1)}$ .  $\lim_{x \rightarrow 0} f(h) = \frac{a^2-2a}{(a-1)^2}$ .
7. (a)  $x(1) = a + m$ . (b)=(c)=(d)= $m$ .
8. (a)  $x(t) = 2(1 - t)$ ,  $y(t) = 3t$ . (b)  $-1/\sqrt{5}$ .