

**EC3322**  
**Industrial Organization I**  
**Semester 1, 2013-2014**  
**Midterm Solutions**

1. d
2. c
3. False. Only A has a dominated strategy.
4. False. Fixed costs do not affect price.
5. To help solve this problem you can use the fact that HHI increases as the market becomes more concentrated, i.e., as firm market shares increase. So the two extreme cases in this problem are: 1. both firms have a market share of 20 and 2. one firm has a market share of 40 and the other a market share of 0. In the first case, HHI is 2000. In the second case, it is 2800.
6. (a) Normal form representation of the game:

		Bill	
		Don't buy	Buy
John	Don't buy	0, 0	50, -30
	Buy	-30, 50	-30, -30

- (b) The Nash Equilibrium is (don't buy, don't buy).
7. Total transportation costs are:

$$T = \frac{1}{2}tx^2 + \frac{1}{2}t^2(1-x)^2.$$

Differentiate with respect to  $t$  to find  $x = \frac{t}{1+t}$ .

8. (a)  $F(p) = \frac{(1-p)^2}{2}$
- (b)  $\pi(p) = (p-c)(1-p) + \frac{(1-p)^2}{2}$
- (c)  $p^* = c$
- (d)  $F^* = \frac{(1-c)^2}{2}$