

UNIVERSITY OF TORONTO
DEPARTMENT OF ECONOMICS

ECONOMICS 381H5S – SUMMER 2009
MANAGERIAL ECONOMICS II: PERSONNEL ECONOMICS

Midterm 1

Instructions

The test is 50 minutes long. Non-programmable calculators are allowed. The test consists of four questions, each worth 5 points. Show all your work in the space provided below the question. If you need additional space, you may write on the back of the page.

LAST NAME _____

FIRST NAME _____

STUDENT NUMBER _____

GOOD LUCK!

Question 1	Question 2	Question 3	Question 4	Total
/5	/5	/5	/5	/20

1. Mike Holmes, a Canadian professional contractor, wishes to hire a door installer for his TV show *Holmes on Homes*. The installer can install q doors per day according to $q=10e+u$, where e is installer's effort that can be observed by Mike and u is a random variable with a mean of zero. The value of each installed door is $p=\$50$. The cost of effort to the installer is $c(e)=5e^2$ and his outside option is $R=\$500$. The installer and Mike are risk-neutral. Design an optimal salary contract for the door installer.

2. Diamond Taxi Association Ltd. wishes to employ a new taxi driver. The number of rides per day q is given by $q=20e+u$, where e is driver's effort and u is a random variable with a mean of zero. Each ride is worth $p=\$5$. The driver's cost of effort is given by $c(e)=e^2/2$ and his outside option is $50n$, where n is driver's ability. The driver and Diamond Taxi are risk-neutral. Assuming that Diamond Taxi cannot observe driver's effort, what is an optimal piece rate contract for a driver of ability $n=40$?

3. A patient health outcome y depends on whether a hospital receives wait time funding. Specifically, $y^1 = 5 + \beta + u$ if the hospital receives the funding and $y^0 = 5 + u$ if it doesn't, where u is a variable that varies across hospitals. The observed patient outcome is 8 in hospitals that received the funding. In addition, the average value of u is 1 for hospitals that received the funding and 3 for other hospitals. What is the difference in the observed patient outcome between hospitals who received the wait time funding and those that didn't? How much of this difference is due to the treatment effect, and how much is due to the selection effect?

4. Allen-Edmonds Shoe Company is a manufacturer of high-priced shoes. For years, it paid its factory employees based on individual output through a piece rate system. In 1990, following the advice of quality gurus, the company abandoned the piece-rate system and started paying employees fixed hourly wages. After the policy change, the average productivity of employees decreased by 10 percent. Discuss whether this result is consistent with economic theory and empirical evidence from Shearer (2002).