

Sample Exercises for Chapters 2 and 3
Economics 136
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1. Suppose that output at your company can be created by using hi or lo skill workers, working independently. Output of each type of worker also depends on how much capital (equipment) you rent for each of them. Output is given by

$$\text{Output} = (2/3)*LK + HK$$

where $b > a$, L= number of LOW skill workers, H = number of high skill workers, and K= units of capital equipment you rent **per worker**.

Low skill workers cost \$5 per hour, and high skill workers cost \$9 per hour. You can rent capital for \$1 per hour.

a) Assume that with current technology, K must equal one regardless of which types of workers you hire. Which type of worker should you choose?

b) Illustrate your answer to a) by calculating the equation for isocost lines and the equation for the isoquant with output=8 units per hour, and then graphing the relevant solution. Indicate which is the optimal type of hiring clearly.

c) Suppose that a new technology comes along that now allows you to rent 8 units of capital **per worker** i.e. $K=8$. Which type(s) of workers should you hire now?

d) Suppose that you have signed a long term contract with the government that requires you to produce 8 units of output per hour, at a price of \$10 each. Which technology, the one you studied in a) or c) will maximize your profits per hour that the factory is open?

2. In the exercise we did last class, comparing situations in which workers could or could not be fired after one year, repeat the analysis assuming that you are choosing between two 63-year-olds, both of whom are likely to retire after two years. Which is the better hire now, A or B?

3. In a sentence or two, what is the problem of adverse selection in hiring? Explain how piece rates and probation can reduce the problem.