

- **How many workers should a firm hire?**
- **Should the firm hire risky or safe workers?**

Problem 1:

You run a telemarketing firm that sells magazine subscriptions. While you do not produce magazines, you employ a sales staff that sells magazines to customers over the phone. Publishers then pay your company based on the number of subscriptions your staff sells.

Your fixed costs (office space, telephone service, and desks) equal \$100,000 per year. The following table provides information about the relationship between sales and the size of the sales staff.

If you can hire a worker for \$19,990.00 per year how many workers should you hire?

Sales Persons	Annual Sales
0	0
1	\$60,000
2	\$110,057
3	\$158,620
4	\$197,730
5	\$224,305
6	\$247,538
7	\$267,438
8	\$285,189
9	\$300,422
10	\$310,421

Why do you think the marginal product of labour declines in this firm?

Problem 2:

You are in charge of the hiring for the research and development laboratory of a major drug company. You have to decide between hiring two chemists, Dr. Andrews and Dr. Bailey. Based on the two candidates' references you believe the following about the chances they will be productive.

- Dr. Bailey is a steady, but not brilliant worker. You are 100% certain he will make a number of discoveries that will generate \$70,000 in revenue each year.
- Dr. Andrews is a brilliant, but highly unpredictable worker. There is a 25% probability she will make a major discovery that will generate \$200,000 in revenue per year. There is a 75% probability that she will blow up the lab which costs the firm \$10,000.

Suppose that the annual salary for a chemist is \$50,000 per year and that Dr. Andrews and Dr. Bailey will retire in 30 years. Suppose further that if Dr. Andrews blows up the lab you are prepared to sack her.

1. Which worker should you hire to maximise the profits of your firm? **Hint:** To make this easy ignore the discounting problem.
2. Suppose that Dr. Andrews and Dr. Bailey intend to retire in 3 years rather than 30? Who should you hire?
3. How would the following influence your decision about which chemist to hire? Would you be more likely or less likely to hire Dr. Andrews? Why?
 - If Dr. Andrews makes a brilliant discovery other firms will attempt to hire her away from your firm. If she goes she takes her discovery with her.
 - There are large costs associated with firing a chemist.