

**MICROECONOMICS I - Extra Exercises C**

1. Consider the market for used cars. The introduction of a certification system managed by a public agency (attesting the exact quality of each car):
  - (a) would solve the problem of moral hazard;
  - (b) would have no impact on this market;
  - (c) would reduce the quantity of bad cars sold in equilibrium;
  - (d) would lead to different equilibrium prices for bad and good cars.
  
2. Say whether the following statements are right or wrong (and motivate your answer):
  - (a) a car rental company that cannot fully control whether the individuals who rent its cars drive them with care or not faces a problem of adverse selection;
  - (b) an employer who doesn't observe whether her/his employees completely fulfill the assigned tasks faces a problem of moral hazard;
  - (c) education is a possible solution to moral hazard in the labor market;
  - (d) adverse selection doesn't affect market efficiency.
  
3. You contract a technician to install a new satellite TV system at your home. After observing that he worked for 10 hours, you pay him accordingly. A week later, a friend of yours tells you that the installation work should have required only 5 hours instead of 10. At that point, you realize that:
  - (a) a problem of moral hazard occurred;
  - (b) a problem of adverse selection occurred;
  - (c) a problem of *ex ante* asymmetric information occurred;
  - (d) both a problem of moral hazard and adverse selection took place.
  
4. Assume that you must decide whether to start up a business project lasting three years. The expected revenues over the three years are: 0 euros (1st year); 1,500 euros (2nd year); 1,700 euros (3rd year). The expected costs over the same period are: 1,500 euros (1st year); 600 euros (2nd year); 600 euros (3rd year). The interest rate is constant and equal to 10%. Is the new project convenient?
  
5. What initial amount of money would translate into 151,250 euros after two years in a bank account at a 10% interest rate?
  
6. If after 7 years you have 126.6666115 euros on your bank account and the interest rate has been constant during these years at a level of 10%, what was the original amount you placed on the account?

7. Assume that a local government receives two different budgets for the construction and utilization of a new public infrastructure. Assume again that the interest rate is expected to remain at a 10% level.

Firm A presents the following budget:

	revenues	costs
1st year	200	300
2nd year	300	300
3rd year	500	300
4th year	1,000	300

Firm B presents the following budget:

	revenues	costs
1st year	500	500
2nd year	500	400
3rd year	500	200
4th year	500	100

Which firm should the local government contract?