1. (15%) "A project can satisfy the PPIC and yet have a negative Net Present Value." Discuss whether and under what conditions this statement is true or false.

2. (15%) A project will employ 110 skilled workers at $1000 per week per employee. 90 of them will be lured from similar jobs with other employers, while 20 of them will gratefully give up casual jobs to return to their profession. What additional information would you need to calculate the average shadow wage of the 110 employees? How would this differ from the market cost per employee to the project?

3. (35%) The search for a Second City Airport has narrowed to two sites: Concord and Hamilton Air Force Base. The two sites can be distinguished in terms of at least three attributes: land cost, driving time from the City, and the numbers of residents who would be displaced.

	Concord	Hamilton
Land cost	$1.4 m	$24.0 m
Driving time	86 min	50 min
Displaced residents	25	526

The City Council has hired you to help them make the final decision, in terms of these attributes only.

   a. Describe the additional information you would need to "price out" the driving time and numbers of displaced residents, in order to apply the PPIC in a cost-benefit analysis.

   b. Assume realistic values for "pricing out" and choose one of the two sites. Clearly state your assumptions.

   c. The airport is to be privatised so that the it is to be built and operated by private enterprise on profit-making lines. On what criteria should the two sites be evaluated by a profit-oriented merchant bank? What, if any, additional information would be required to make your decision?

4. (35%) The Tasmanian government is considering improving the highway between Hobart and Launceston. It undertakes a cost-benefit analysis of the project. The main benefit of the upgrading is that it increases the traffic speed between the two cities. The average time taken to drive would fall by 12 minutes. (The marginal out-of-pocket cost would remain unchanged.) This reduction in the opportunity cost of trips would result in an increase in the number of trips made, from 790,000/year to 1,030,000/year. Drivers are known to value travelling time savings at the rate of $1.75/hr.

   a. Describe what is meant by consumers' surplus.

   b. Calculate the annual value of the benefits (in the form of the increase in consumers' surplus) conferred on car users by the road improvements. (Assume 1.3 people/car, unchanging with road improvements.)

   c. The road improvements will also lead to changes in the numbers of people killed and injured in road accidents.

	No improvements	Road improved
Trips per year (th)	790	1030
Deaths/year		
(a) Car users	0.087	0.103
(b) Pedestrians	0.040	0.041
(c) Total	0.127	0.144
Injuries/year		
(a) Car users	0.332	0.340
(b) Pedestrians	0.182	0.155
(c) Total	0.514	0.495

   Explain whether taking account of these changes in casualty rates would make the total benefits of the road improvement greater or less than the amount per year calculated in (b).