

**Final Exam**  
(100 points)

- (10 pts) 1. What is path dependence and why might it be a concern in welfare analysis?
- (10 pts) 2. Define compensating variation in words (first) and with a fully explained formula of your choice (second), and indicate the circumstances under which this welfare measure is an appropriate choice for the analyst.
- (10 pts) 3. Illustrate and discuss the relevant welfare measures for a policy that removes a price support. Avoid using the term "deadweight loss" anywhere in your responses. Define all technical economic terms you use. Are all of the relevant effects commensurables?
- (15 pts) 4. Do you agree with the textbook authors when they say that "theft and vandalism" is an externality example? Compose a clear argument that includes both a formal definition of externality and attention to policy options.
- (25 pts) 5. Define and discuss net present value as a social decision criterion. Include attention to its additive (intraproduct and interperiod) and monetarization properties and the implications of these properties. Include attention to the fact that net present value is a resolute test in that it is rarely indifferent to a project/policy and must therefore possess properties of a social welfare function as well as normative disappointments.
6. A 2-input (x and z) and 1-output (y) firm uses a technology given by  $y=10x^{1/3}z^{1/3}$ . Input x is variable in the short term. Input z is only partially variable. If the firm wishes to change z from some starting level, it takes a full period before the change can be implemented. Initially, market prices have been  $(p, w, r) = (10., 4., 21.)$  for  $(y, x, z)$ , and the firm is in equilibrium with respect to these prices.

An exogenously caused policy change will immediately result in  $r = 16$  if the policy is adopted.

Considering the immediately forthcoming 5 years for this single firm, we wish to compute an aggregate monetary value of this price change across all five years using the constant discount rate, d.

- (15 pts) a. Number and explain steps for a single procedure that calculates the needed value using computed supply and/or demand functions. Use supply and/or demand graphics to illustrate as appropriate.
- (15 pts) b. Perform the analysis needed to calculate the value. Enumerate your work following the same steps you identified in part (a).