Economics 222
Exercise B Answer Guide

1. A poll tax involves billing each taxpayer a lump sum. The marginal tax rate is zero, which does encourage labour supply. The average tax rate falls as income rises, so this also encourages labour supply for low-income earners, though this effect goes away as income rises. This regressive feature – falling average tax rates across the range of income – probably explains why we do not observe poll taxes. (The commentator also might explain why public policy would want to aim at greater labour supply.)

2. $u = U/(U + E)$ so $1 - u = E/(U + E)$. We know that $er = E/(E + N + U)$ and $pr = (E + U)/(E + N + U)$ so the result follows.

3. (a) Using our formula, the employment ratio was 62.7 percent.

(b) 1.16 million people were unemployed

(c) 27.64 million

4. (a) Your graph will show a rising line, starting at 1.79 in 1991 and ending at 2.01 in 2005.

(b) There is evidence of this trend.

(c) The two leading explanations are skill-biased technical change (increased demand for skilled workers) and globalization (effectively increased supply of unskilled workers).

(d) Looking at employment quantities might help, as suggested by labour supply-demand diagrams. Perhaps looking at trends in other countries with which Canada trades also would be useful.

5. (a) $c = 70$ so private saving is zero.

(b) Now $c = 75.1$ so private saving is 4.9. Approximately half the tax reduction is saved and half is consumed. Government saving is unchanged, so national saving rises by 4.9.

(c) To balance their budget the government must set $t^f = 30 + 1.04(10) = 40.4$.

(d) The present-value of lifetime resources is unchanged, so consumption does not change: $c = 70$. That means that private saving is 10; the entire tax cut is saved. Government saving is -10, private saving is 10, so national saving is unchanged at zero.

(e) Ricardian equivalence will continue to apply if current taxpayers are concerned about their descendants and so save the entire tax cut to add to their bequests. The realism of this behaviour is an interesting empirical question.

6. (a) We find that
$$MPK = K^{-0.5} = 0.10 + 0.02,$$

which gives $K^* = 69.44$.

(b) With $K_t = 55$, the capital would fall to 49.5 with no investment. So to reach the target of 69.44 requires $I_t = 19.94$.

(c) With $r = 0.03$ we find that the target is 59.17 so that investment is 9.67. Thus there is a negative relationship between the real interest rate and investment plans.

7. For a closed economy we set $S = I$ which gives, after rearranging:

$$r = \frac{70}{40} + \frac{G}{40},$$

which shows how reductions in G would lead to a lower real interest rate.