Don't panic. Think before you write. Think like an economist. Use the concepts that we have developed in this course to guide your answers.

This examination requires forty minutes. Forty points are possible. The examination identifies the number of points allocated to each item or question. This number also indicates the approximate number of minutes that should be required to arrive at an answer. Time spent on any question in excess of that recommended will reduce your opportunities to earn points from other questions.

You must sign the Colorado Honor Pledge if you wish your exam to be graded. You may answer the questions in any order. Ensure that you clearly identify the question you believe yourself to be answering in your blue book. Please write as clearly as possible.

(11) 1. Measurement

(2) a. In 2008, income in the U.S. was divided as follows: The lowest quintile of the population received 3.4% of income. The second quintile received 8.6% of income. The third quintile received 14.7% of income. The fourth quintile received 23.3% of income. The fifth quintile received 50.0% of income. Use these income shares in question a to construct the cumulative income distribution for the U.S. in 2008.

(2 points out of 2) Cumulative income distribution

<table>
<thead>
<tr>
<th>Quintile</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fifth quintile</td>
<td>100.0%</td>
</tr>
<tr>
<td>Fourth quintile</td>
<td>50.0%</td>
</tr>
<tr>
<td>Third quintile</td>
<td>26.7%</td>
</tr>
<tr>
<td>Second quintile</td>
<td>12.0%</td>
</tr>
<tr>
<td>First quintile</td>
<td>3.4%</td>
</tr>
</tbody>
</table>

(5) b. The table below presents the cumulative income distributions for the U.S. in 1998, 1978 and 1968. Compare the Lorenz Curves for each pair of years. Does the Lorenz Curve for one year Lorenz-dominate the Lorenz Curve for the other in each pair? If yes, explain why. If no, explain why
Cumulative income shares by quintile

<table>
<thead>
<tr>
<th></th>
<th>First</th>
<th>Second</th>
<th>Third</th>
<th>Fourth</th>
<th>Fifth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1998</td>
<td>3.6</td>
<td>12.6</td>
<td>27.6</td>
<td>50.8</td>
<td>100.</td>
</tr>
<tr>
<td>1978</td>
<td>4.3</td>
<td>14.6</td>
<td>31.5</td>
<td>56.3</td>
<td>100.</td>
</tr>
<tr>
<td>1968</td>
<td>4.2</td>
<td>15.3</td>
<td>32.8</td>
<td>57.2</td>
<td>100.</td>
</tr>
</tbody>
</table>

(5 points out of 5) Year 1998 was Lorenz dominated by the year 1978, as the share of the income possessed by each quintile was greater in 1978 than in 1998. The Lorenz Curve for 1978 would lie closer to the 45 degree line than that for 1998. For the pair 1978 and 1968, there is no Lorenz dominance present as the two cross each other somewhere between the first and second quintile, as 4.2<4.3 meaning the year 1978 was more equal for those at the first quintile. 1968 does Lorenz dominate 1998 as the value at each quintile is higher in 1968, making it more equal.

(4) c. Based on these data, the U.S. gini coefficient in 2008 was .466. It was .456 in 1998, .402 in 1978 and .388 in 1968. Do these Gini coefficients seem to be consistent with the cumulative income distributions? Why or why not? What do these Gini coefficients indicate about the evolution of inequality in the U.S. from 1968 to 2008?

(4 points out of 4) A higher gini coefficient correspond to greater inequality while a lower gini coefficient corresponds to greater equality. Thus since every year dominates 2008, and 1978 and 1968 dominate 1998, it makes sense that the gini coefficient is highest for 2008, second highest for 1998, then since 1968 almost dominates 1978, it makes sense that 1968 is lower than 1978. This indicates inequality increased from 1968 to 2008.

(13) 2. Institutions and economic growth

(5) a. Consider the arguments in Levine (Levine, Ross (2005) “Law, endowments and property rights”, Journal of Economic Perspectives, Vol. 19, No. 3, Summer, 61-88). Relatively speaking, how strong are private property rights under civil and common law regimes? Is this comparison an accident or is it inherent in the nature of these regimes? How would each of these regimes cope with the changes necessary for rapid economic
2. a (5 points out of 5) Prop rights are down under civil law, up under common law. Not an accident, civil law societies were set up to exploit natives in colonial times (take their property) while common law was set up to encourage settlement (protect property of settlers). The common law society would cope w/ econ growth better as it would have the court systems necessary to adapt laws as necessary already set up and the property rights in effect that would further encourage growth.

(3) b. Svensson (Svensson, Jakob (2005) “Eight questions about corruption”, Journal of Economic Perspectives, Vol. 19, No. 3, Summer, 19-42) asserts that (pg. 24), “(w)ith few exceptions, the most corrupt countries have low income levels.” Why might low income countries have higher levels of corruption?

(3 points out of 3) There are a few reasons why the most corrupt countries have the lowest income levels. In these countries the institutions are probably such that property rights are weak therefore creating easy opportunity to rent seek. This result leads to 2 more separate results, the first of which is that easy rent seeking produces little incentive to produce a lot of product seeing as how everything produced above subsistence will be stolen anyways and also, being stolen from it is difficult for the producers to be efficient and invest in capital that would potentially raise their income.

(5) c. Svensson continues “(s)trikingly, many are governed, or have recently been governed, by socialist governments.” What does this suggest about the larger institutional context in these countries? What does this suggest about how corruption would affect economic growth?

(3 points out of 5) The institutions are probably poorly developed and poorly run. Democracies tend to have lower levels of corruption b/c of the accountability necessary to run a true democracy. Socialist govt., however, gives more power to the govt, therefore may result in more corruption. Corruption has a distinctly negative effect on econ. growth due to the fact that it discourages entrepreneurship and new entrants into markets b/c of bribes that may be necessary.

(16) 3. The Kuznets Curve

(3) a. Briefly explain the relationship between economic growth and inequality which is represented by the Kuznets Curve.
As economic growth starts, there is a high variance of inequality because of the concentration of land holdings. As innovation occurs, capital owners (and skilled labor) get richer, creating inequality. Over time, there is innovation diffusion and skill deepening and inequality decreases as income per capita increases.

The following is a graph which plots GDP per capita and the Gini coefficient for each of 140 countries, using data from the 2009 UNDP Human Development Report. The vertical axis measures the Gini coefficient. The horizontal axis measures GDP per capita. Microsoft’s Excel is far too stupid to actually label the axes, so I have to do it here.

Should we expect to see that countries at a single point in time should line up roughly along the Kuznets Curve, even though that Curve is intended to explain what happens to a single country as it grows? Why or why not?

The cross-sectional data should roughly reflect the longitudinal relationship between income and inequality in a single country. Although the stories of how countries grow may not be identical, the main cause of both growth and inequality is technological change, so this pattern should be roughly consistent from country to country even though they have developed at different points in history.

Do you think that the Kuznets Curve pattern is apparent in this graph? If yes, how do you discern it and what might explain any deviations from the Kuznets Curve? If no, why do you think that the graph does not conform to this pattern?

I think that the middle of the Kuznets curve where inequality decelerates is hard to find in the given graph, but the beginning and end where inequality is small are very apparent. There is a large cluster where GDP is low and Gini coefficients are low (less inequality), but when GDP starts to rise, not all the countries are following the Kuznets curve. There is no indication of a trend towards increased Gini coefficients (more inequality). Once GDP gets above 20,000-ish, however, the data points are all low again with small Gini coefficients (less inequality).

From the perspective of the horizontal axis of this graph, there is huge variation in levels of GDP per capita across countries.

According to Pritchett (Pritchett, Lant (1997) “Divergence, big time”, Journal of Economic Perspectives, Vol. 11, No. 3, Summer, 3-17) has this variation grown or diminished over the past 200
years? What, if anything, does Pritchett have to say about why this variation still exists?

(3 points out of 3) This variation has grown. Big time. According to Pritchett, there has been a high level of convergence among 'rich' nations since ~1800, but 'poor' nations as a group have failed to converge with rich nations as a group. In fact, the two groups have noticeably diverged. The variation still exists because of corruption, lack of democratic diffusion, and socialist institutions.


(3 points out of 3) Easterlin says that the sources and possible persistence of variation are because some countries are yet to reach their turning point of modern GDP growth. Countries are lagging behind the leaders for a number of different reasons such as level of schooling, access to capital, and political situations. Once laggard countries hit their turning point, they should enjoy high economic growth which will close the gap between them and the worldwide leaders.