For the following problems, suppose initially that the short-run and long-run equilibria coincide.

Problem 1. Suppose the stock market experiences a large boom when Google, Amazon, Microsoft, and Facebook all merge into one giant conglomerate and decide to colonize Mars in the first step of their plan to rule the observable universe. Show what happens in the short run and in the long run.

A stock market boom means an increase in wealth, which in turn means increase in consumption, which in turn means AD shifts to the right. Price level and output are up in the short run; but only the price level up in the long run.

Problem 2. Suppose the Federal Reserve decides it doesn't like the implications you've found in the first problem. In particular, they don't want the price level to change from its initial level. (They're indifferent to the rest of the universe.) What tools could the Federal Reserve use to ensure a stable price level in the face of a booming stock market?

If the Fed cuts the money supply, it will shift AD back to the left, hopefully to its original position. They can do this by: an open market sale; increasing the discount rate; increasing interest on reserves; or increasing the required reserve ratio.

Problem 3. In an alternate universe, Ronald Rump is elected President of the United States of Umareco. Despite his name, President Rump actually really loves immigrants, so he and Congress enact policy that dramatically increases the number of people immigrating into the United States and becoming permanent citizens. Show how this affects the economy using the AS/AD framework.

This will shift the LRAS to the right since more people means more productive capacity. Anything that shifts LRAS will also shift SRAS because we are changing the Y_n *in* $Y^* = Y_n + \alpha(P^* - P^e)$.

Things that shift LRAS are: increases in the number of employed; increases in capital; increases in natural resources; improved technology. A change in the expected price level will shift SRAS but not LRAS.

But since there's more people, there's more consumption. So AD shifts to the right. Output will increase, but what happens to the price level depends on which shift is of larger magnitude.

Problem 4. Ever seen the movie *Idiocracy*? Suppose that actually happens—human capital takes a nose-dive. Show how this affects the economy using the AS/AD framework.

This will shift the LRAS to the left since people are not as educated anymore. Anything that shifts LRAS will also shift SRAS. So we end up with no change in the price level but decreased natural output.

Problem 5. Suppose a super villain, Diogenes the Cynic, invades the Federal Reserve and cuts the money supply in half—he burns $750 billion for his own amusement. Show the effect of Diogenes' actions using the AS/AD framework.

A reduction in the money supply shifts AD to the left as the interest rate rises and investment falls. In the short run that means we have a lower price level and lower output—a recession. In the long run we'll be back to full output but with a lower price level.

Problem 6. What could the government do to try combat Diogenes' antics as found above to make sure that output remains at its full output level?

The government wants to shift AD back to the right. They can do this by increasing government purchases or by cutting taxes. If they do it just right, then there will be no change in AD and thus no change in the price level or output.