- Second midterm is next Monday. Will probably cover through chapter 17, not cumulative. (The final will be cumulative.)

- Find out your discussion section (e.g. A13) and write it on both the analytical part of the exam and the scantron in the subject area.

- Make sure to write down your ID number correctly on the scantron.

- **You will lose points if you fail to include the correct discussion section on both the analytical and the scantron; and if you fail to include your correct ID number on the scantron.**

	Agos (M)	Tian (T)	Keisuke (W)	William (M)
3:10	–	–	–	A13
4:10	A01	A05	A09	A14
5:10	A02	A06	A10	A15
6:10	A03	A07	A11	A16
7:10	A04	A08	A12	–

Problem 1.
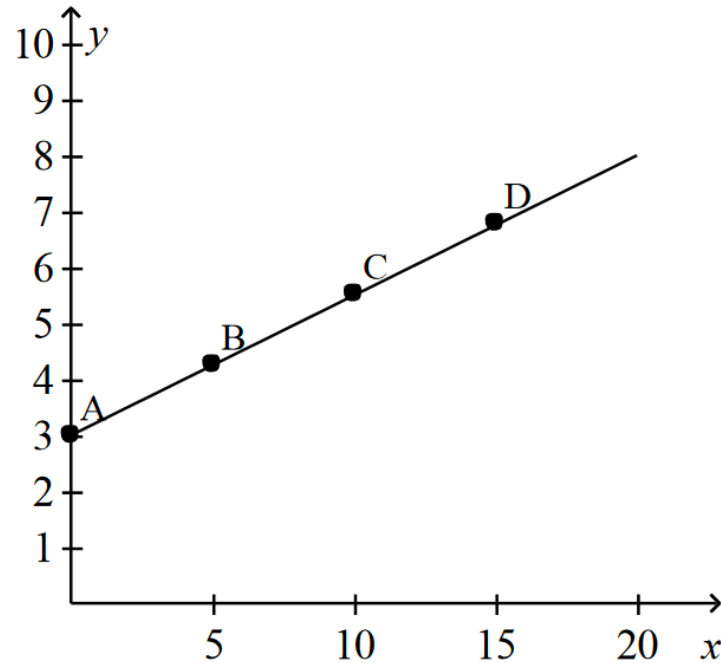
x represents risk and y represents return.

Point A represents a situation in which

(a) all of a persons savings are allocated to a class of safe assets.

(b) the person knows with certainty that his or her return will be 3 percent.

(c) the standard deviation of the persons portfolio is zero.

(d) All of the above are correct.

Answer 1: (d). At point A, notice that $x = 0$, so there is no risk in the allocation. In other words, the allocation consists entirely of safe assets.

Because the assets are all safe, there is no risk and no uncertainty, so the return will be exactly 3 percent.

Finally, since there is no risk and no uncertainty, there is no variation in the return, so the standard deviation is zero.

A **normal distribution** has a typical bell-curve shape. It is centered around its mean, μ, and its "spread" is expressed by its standard deviation, σ. One property of normal distributions is that approximately 95% of the area underneath the curve is found between two standard deviations of the mean.
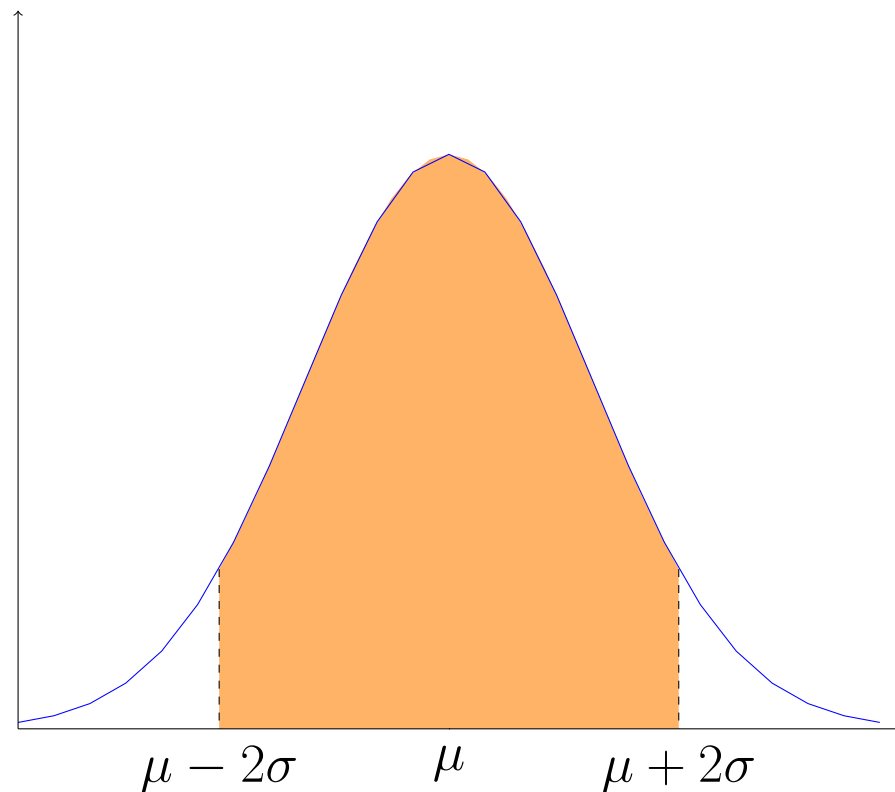

The shaded area is 95% of the area underneath the curve. Thus, there is a 95% chance that an occurrence will be somewhere between $\mu - 2\sigma$ and $\mu + 2\sigma$.

Problem 2. Suppose Juanita's portfolio contains 75% diversified stocks and 25% risk-free government bonds with an annual return of 9.5% and a standard deviation of 15%. The returns will typically (about 95% of the time) be within what interval?

Answer 2. The mean is $\mu = 9.5$, and the standard deviation is 15. Thus, there is a 95% chance that the actual return is in the interval

$$[9.5 - 2 \times 15, 9.5 + 2 \times 15] = [-20.5, 39.5].$$

-20.5% 9.5% 39.5%
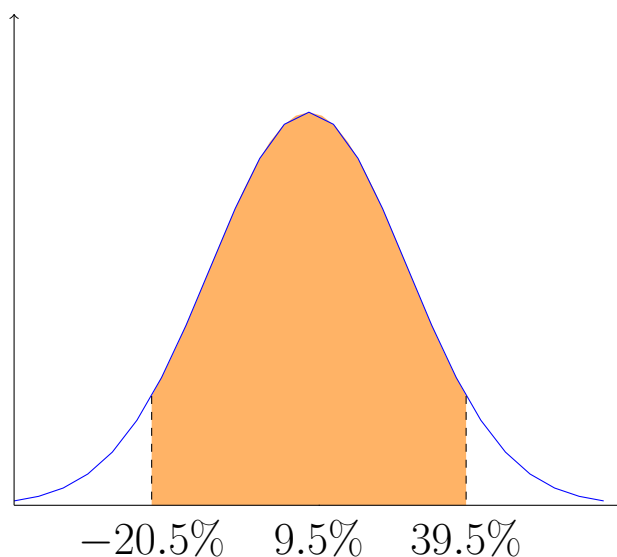
- Unemployment resulting from the process of matching workers and jobs is called **frictional unemployment**, and it is often thought to explain relatively short spells of unemployment. For example, if you graduate from university, you can't necessarily expect to find a job straight away which matches your skills. This period of searching for a job is known as frictional unemployment.

- When the quantity of labor supplied exceeds the quantity demanded, this sort of unemployment is called **structural unemployment**, and it is often thought to explain longer spells of unemployment. For example, Internet news killed a lot of newspapers, and those workers don't all have Internet skills.

- Changes in the composition of demand among industries or regions are called **sectoral shifts**. It takes time for workers to search for jobs in the new sectors, so sectoral shifts temporarily cause *frictional* unemployment. A decline in the price of oil may cause the demand for labor to fall in oil-producing states such as Texas, but because cheap oil makes driving less expensive, it increases the demand for labor in auto-producing states such as Michigan. Because sectoral shifts are always occurring, and because it takes time for workers to change sectors, there is always frictional unemployment.

- According to the theory of **efficiency wages**, firms operate more efficiently if wages are above the equilibrium level. Therefore, it may be profitable for firms to keep wages high even in the presence of a surplus of labor.

Problem 3. Consumers decide to ride bikes more and drive cars less. Bicycle companies expand production while automobile companies fire workers. This is an example of

(a) frictional unemployment created by sectoral shifts.

(b) frictional unemployment created by efficiency wages.

(c) structural unemployment created by efficiency wages.

(d) structural unemployment created by sectoral shifts.

Problem 4. An economist claims that changes in information technology and unemployment insurance have reduced unemployment. Which of these changes affect frictional unemployment?

(a) both the changes in information technology and unemployment insurance

(b) only the changes in information technology

(c) only the changes in unemployment insurance

(d) neither the changes in information technology nor the changes in unemployment insurance

Answer 3: (a). There's no mention of efficiency wages, so cross (b) and (c) out right away. Then it's a matter or whether this represents structural or frictional unemployment. The answer isn't always so cut and dry, and it will often depend on how related two fields seem. In this case I'm inclined to say that most fired car people can work for the bicycle company—*so there is very little mismatch in skills between what the fired car people have and what the bike company wants.* A lot of those jobs are generic office jobs, accounting jobs, etc that could move between the two industries without much difficulty. And you'd figure a car mechanic could learn to fix a bike pretty quickly. So it's frictional.

Answer 4: (a). Information technology would make it easier to match workers with firms, since Craigslist and Monster.com and etc are a lot more efficient than old-timey classified or town criers or whatever. So that's going to affect frictional unemployment by reducing its duration.

On the other hand, if people are paid unemployment insurance, then they have more incentive to look longer for a job. Thus, unemployment insurance will increase the duration of frictional unemployment.

Problem 5. Yves[1] is an unpaid worker in his family's bakery. The Bureau of Labor Statistics counts Yves as

(a) unemployed and in the labor force.

(b) unemployed and not in the labor force.

(c) employed and in the labor force.

(d) employed and not in the labor force.

Problem 6. Sheamous loses his job and decides to sit on the beach rather than look for work during the next few months. Other things the same, the unemployment rate

(a) increases and the labor-force participation rate decreases.

(b) increases and the labor-force participation rate is unaffected.

(c) is unaffected and the labor-force participation rate decreases.

(d) and the labor-force participation rate are both unaffected

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[1]This is evidently pronounced "Eve." I guess it's French. I can speak French and I had no idea.

Answer 5: (c). Yves falls into a group called *unpaid family workers*, which includes any person who worked without pay for 15 hours or more per week in a business or farm operated by a family member with whom they live. Unpaid family workers comprise a small proportion of total employment.

Answer 6: (a). *Pay attention to the wording!* In particular, make sure you differentiate between *number* of unemployed people and the *unemployment rate.* He was fired but isn't looking for a job, so there is no change in the number of unemployed. He is out of the labor force now, so the labor force is smaller.
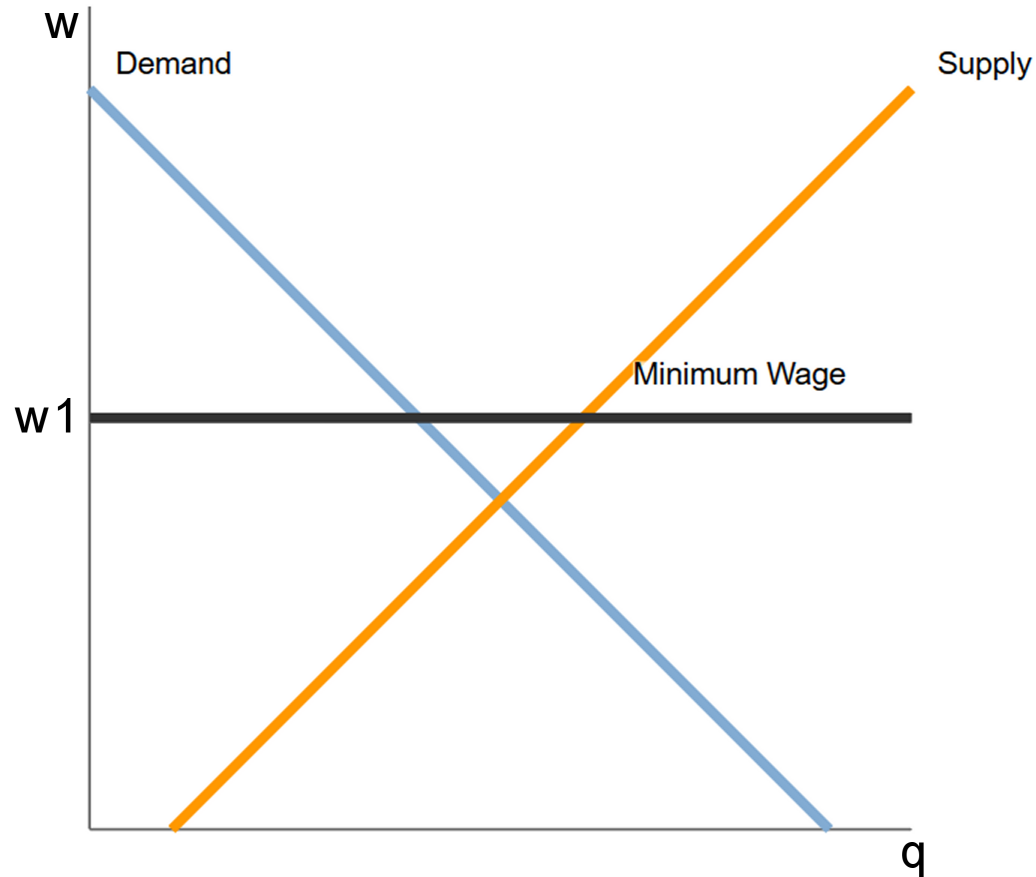
$$\text{unemployment rate} = \frac{\text{number of unemployed}}{\text{labor force}} \times 100$$

Unchanged numerator, smaller denominator implies increased unemployment rate.

$$\text{labor force participation rate} = \frac{\text{labor force}}{\text{adult population}} \times 100$$

The labor force is smaller, the adult population is unchanged, so this decreases.

Problem 7.

(a) Indicate the quantity of labor demanded and the quantity of labor supplied at the wage shown.

(b) Show what happens if there is an increase in the minimum wage.

Answer 7.
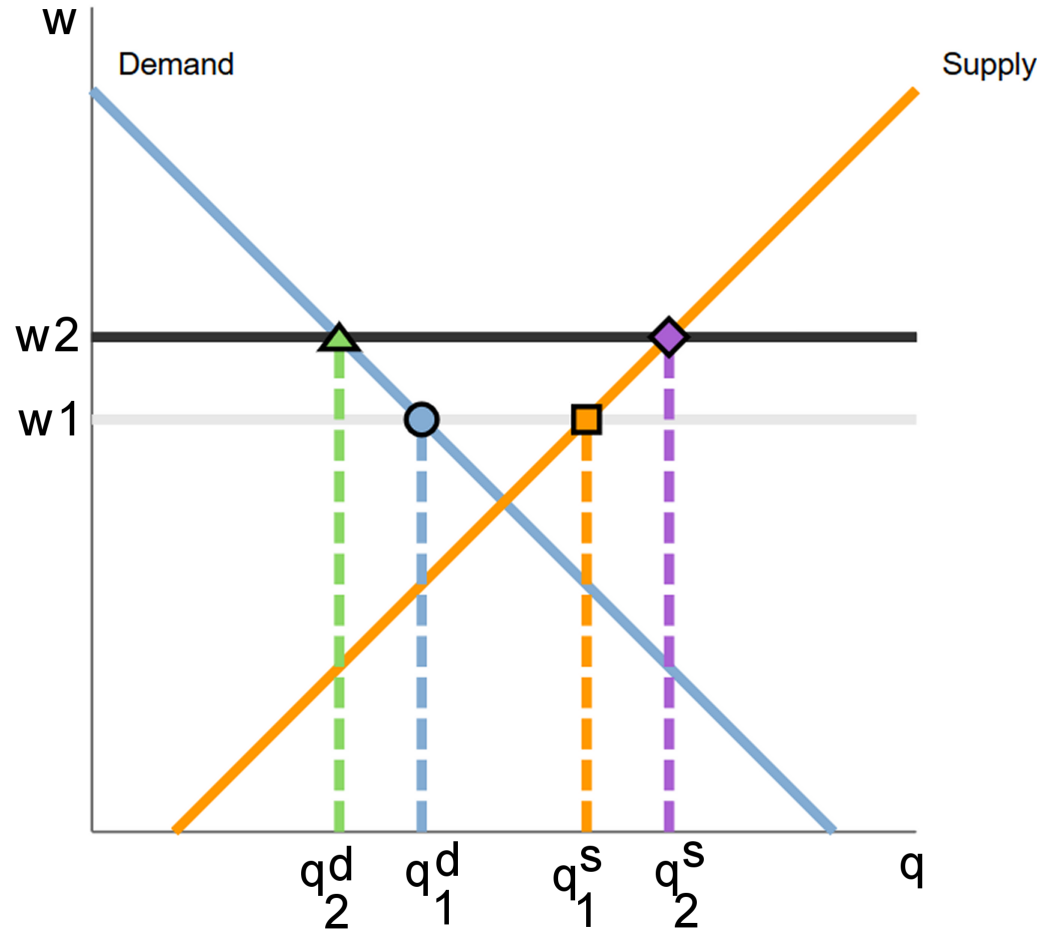
Get in the habit of drawing these yourselves. Make sure to label

- Each axis—in this case w and q

- Each curve—usually supply S and demand D

- Each relevant point—both the price and the quantity on their respective axes.

Problem 8.   The ability of insurance to spread risk is limited by

(a) risk aversion and moral hazard.

(b) risk aversion and adverse selection.

(c) moral hazard and adverse selection.

(d) risk aversion only.

Problem 9.   According to the efficient markets hypothesis,

(a) changes in stock prices are impossible to predict from public information.

(b) excessive diversification can reduce an investors expected portfolio returns.

(c) the stock market moves based on the changing animal spirits of investors.

(d) actively managed mutual funds should give higher returns than index funds.

Answer 8: (c). **Adverse selection** refers to the observation that high-risk people are more likely to apply for insurance than low-risk people, and therefore insurance does not spread risk as effectively as it would if all people were equally at-risk (or equally willing to purchase insurance).

    Moral hazard further limits insurance's ability to reduce risk. This is because those with insurance might actually engage in riskier behavior than they would if they were uninsured.

Answer 9: (a). The **efficient market hypothesis** asserts that stock prices reflect all publicly available information. Changes in information will change a stock price, but according to the theory, these informational changes are unpredictable.

More on the Efficient Markets Hypothesis

- Each company listed on a major stock exchange is followed closely by many money manager.

- Their job is to buy a stock when its price falls below its fundamental value and to sell it when its price rises above its fundamental value.

- So at the market price, the number of shares being offered for sale exactly equals the number of shares that people want to buy. In other words, at the market price, the number of people who think the stock is overvalued exactly balances the number of people who think its undervalued. As judged by the typical person in the market, all stocks are fairly valued all the time.

- So at any moment in time, the market price is the best guess of the companys value based on available information.

Problem 10. A company that produces golf clubs is considering buying some new equipment that it expects will increase future profits. If the interest rate falls the present value of these future earnings

(a) rises. The company is more likely to buy the equipment.

(b) rises. The company is less likely to buy the equipment.

(c) falls. The company is more likely to buy the equipment.

(d) falls. The company is less likely to buy the equipment.

Problem 11. If stock prices follow a random walk, it means

(a) long periods of declining prices are followed by long periods of rising prices.

(b) the greater the number of consecutive days of price declines, the greater the probability prices will increase the following day.

(c) stock prices are unrelated to random events that shock the economy.

(d) stock prices are just as likely to rise as to fall at any given time.

Answer 10: (a).   Recall that we calculate the present value of something by discounting it, i.e. by dividing the future value by some power of $(1 + r)$. The question is telling us that r will decrease. This means we'll be dividing by a smaller $(1+r')$. Dividing by a smaller number will *increase* the present value. The present value of buying the equipment increases, so they're more likely to buy it.

Answer 11: (d).   One implication of the efficient markets hypothesis is that stock prices should follow a random walk. This means that changes in stock prices are impossible to predict from available information. So you have no idea whether the stock will increase or decrease in value at any given time.

   If the efficient markets hypothesis is correct, then there is little point in spending many hours studying the business page to decide which twenty stocks to add to your portfolio. If prices reflect all available information, no stock is a better buy than any other. The best you can do is to buy a diversified portfolio.

Problem 12.   Which of the following is a function of money?

(a) a unit of account

(b) a store of value

(c) medium of exchange

(d) All of the above are correct

Problem 13.   Which of the following is both a store of value and regularly used as a medium of exchange?

(a) cash and stocks

(b) cash but not stocks

(c) stocks but not cash

(d) neither cash nor stocks

Answer 12: (d). For something to be considered money, it must be all three following things:

- A **medium of exchange** is an item that buyers give to sellers when they purchase goods and services.

- A **unit of account** is the yardstick people use to post prices and record debts.

- A **store of value** is an item that people can use to transfer purchasing power from the present to the future.

Answer 13: (b). Stocks are a store of value, but you're never going go to buy a pizza with a Microsoft stock, and thus isn't a medium of exchange.

The quantity of money circulating in the economy is called the **money stock**. **Liquidity** is the ease with which an asset can be converted into the economy's medium of exchange. We can measure the money stock differently depending on how liquid an asset is.

- **M1** consists of the most highly liquid assets—coins and currency in circulation, traveler's checks, demand deposits (eg checking account), and other checkable deposits.

- **M2** includes all of M1 and a collection of additional assets that are slightly less liquid—savings accounts, money market deposit accounts, small time deposits (including certificates of deposits), and retail money market mutual funds.

Point is, the money stock for the U.S. economy includes not just currency but also deposits in banks and other financial institutions that can be readily accessed and used to buy goods and services.

Problem 14.   M1 equals currency plus demand deposits plus

(a) nothing else.

(b) other checkable deposits.

(c) traveler's checks plus other checkable deposits.

(d) traveler's checks plus other checkable deposits plus savings deposits.

Problem 15.   Credit card limits are included in

(a) M1 but not M2.

(b) M2 but not M1.

(c) M1 and M2.

(d) neither M1 nor M2.

Answer 14: (c).   M1 consists of the most highly liquid assets—coins and currency in circulation, traveler's checks, demand deposits, and other checkable deposits. Savings accounts are included in M2.

Answer 15: (d).   Credit cards are excluded from all measures of the quantity of money. The reason is that credit cards are not really a method of payment but a method of deferring payment. When you buy a meal with a credit card, the bank that issued the card pays the restaurant what it is due. At a later date, you will have to repay the bank (perhaps with interest). When the time comes to pay your credit card bill, you will probably do so by writing a check against your checking account.

- Money in the form of a commodity with intrinsic value is called **commodity money**.

- Gold coins are an example of commodity money.

- When an economy uses gold as money (or uses paper money that is convertible into gold on demand), it is said to be operating under a **gold standard**.

- Money without intrinsic value is called **fiat money**.

- A fiat is an order or decree, and fiat money is established as money by government decree.

- To a large extent, the acceptance of fiat money depends as much on expectations and social convention as on government decree.

- Fiat money is only useful as money because every agrees that it's useful as money.

- If suddenly everyone decides not to accept dollar bills, then that piece of paper becomes worthless since its value is not backed by gold or any other intrinsically valuable asset.

- The **Federal Reserve** regulates the U.S. system of fiat money.

- The **money supply** is the quantity of money available in the economy.

- The **Federal Open Market Committee (FOMC)** has the power to increase or decrease the number of dollars in the economy.

- The Fed's primary tool is the **open-market operation**—the purchase and sale of U.S. government bonds.

Problem 16.   When conducting an open-market sale, the Fed
(a) buys government bonds, and in so doing increases the money supply.
(b) buys government bonds, and in so doing decreases the money supply.
(c) sells government bonds, and in so doing increases the money supply.
(d) sells government bonds, and in so doing decreases the money supply.

Answer 16: (d).   The Fed sells bonds, which means people give their money to the Fed—and therefore that money is no longer in circulation. So the money supply falls.