<u>Practice problems with Comparative Statics:</u>

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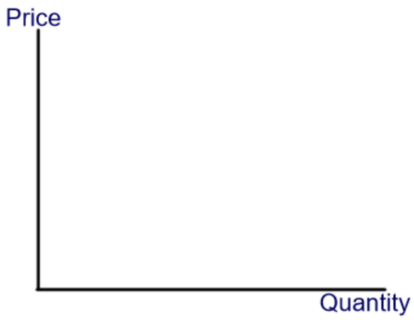
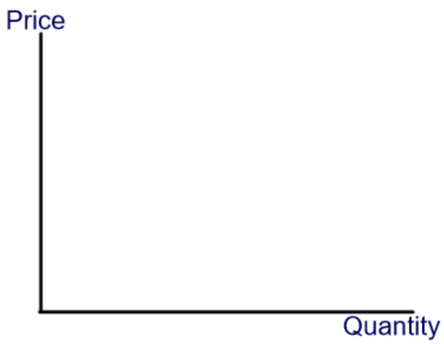
Consider the *market for nuts*. Evaluate the impact on market equilibrium price and quantity of each of the following events. (Only one curve shifts in these problems):

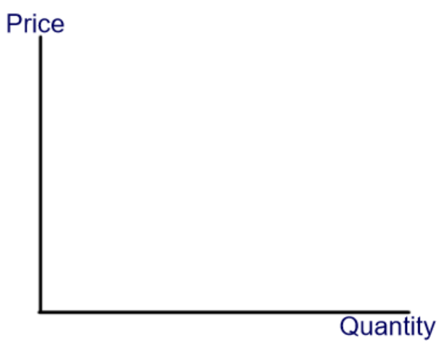
- News release: nuts are very, very good for you!



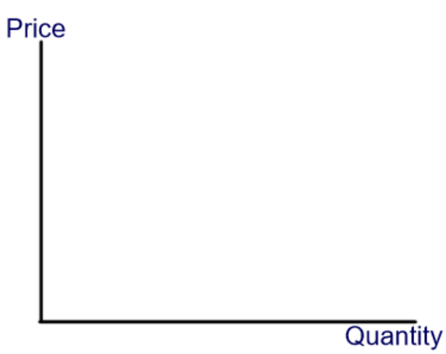
- Farmers must pay their workers higher wages to harvest nuts this year



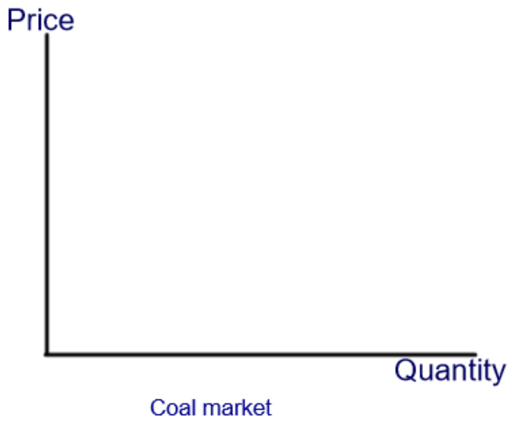
- The price of pretzels (another popular snack food) declines

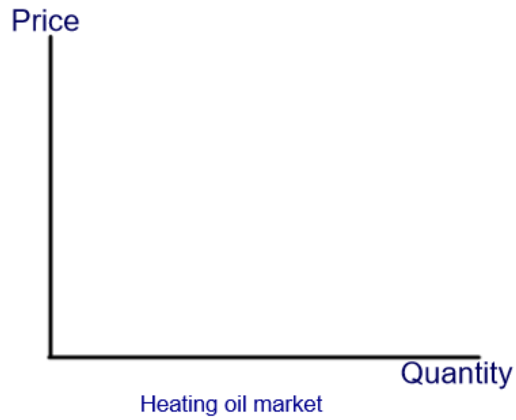


- Good weather produces a very large crop of nuts



- Imagine a **new invention** that allows each mine worker to mine twice as much **coal**. Predict how this will affect the equilibrium price and quantity in the market for coal and the market for heating oil.





Explanation:

Supply and demand in the real world:

Read the excerpt from the *Wall Street Journal* article "Going Out for Lunch is a Dying Tradition," (Julie Jargon, May 2017) below and answer these questions:

1.) What factors have caused restaurant meal prices to increase? Are these factors related to supply, to demand or both?

2.) What factors have caused a decrease in the number of lunchtime restaurant meals? Is this due to supply, to demand or both?

3.) What is the economic term for the relationship between "food away from home" and "foods prepared at home?" Is this relationship shifting?

Going Out for Lunch Is a Dying Tradition

Restaurants suffer as people eat at their desks; no more three-martini sit-down meals

By Julie Jargon, The Wall Street Journal, May 30, 2017

The U.S. restaurant industry is in a funk. Blame it on lunch.

Americans made 433 million fewer trips to restaurants at lunchtime last year, resulting in roughly $3.2 billion in lost business, according to market-research firm NPD Group Inc. It was the lowest level of lunch traffic in at least four decades.

While that loss in traffic is a 2% decline from 2015, it is a significant one-year drop for an industry that has traditionally relied on lunch and has had little or no growth for a decade.

"I put [restaurant] lunch right up there with fax machines and pay phones," said Jim Parks, a 55-year-old sales director who used to dine out for lunch nearly every day but found in recent years that he no longer had room for it in his schedule.

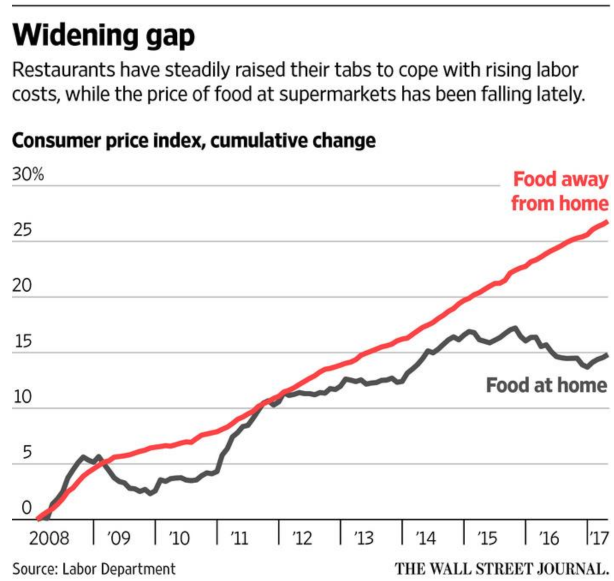
When he isn't on the road for a Detroit-based building products company, Mr. Parks works from his home in Carlisle, Ohio, and eats there. When he meets clients at their offices, they have food delivered and work during what they call a "lunch and learn."

Even some restaurant-company executives don't go out for lunch. Employees at Texas Roadhouse Inc.'s Louisville, Ky., headquarters order in so often that they know the delivery drivers by name. "A lot of our folks are trying to be more efficient," company President Scott Colosi said.

Cost is another factor working against eating out for lunch. While restaurants have raised their tabs over the past few years to cope with rising labor costs, the price of food at supermarkets has continued to drop, widening the cost gap between bringing in lunch and eating out.

Restaurants are adapting by offering delivery, faster service and smaller portions. But the shift signals trouble for the industry, which makes more money serving meals inside restaurants, where soft drinks, alcoholic beverages, appetizers and desserts boost margins. Maintaining nearly empty dining rooms is costly.

Among the hardest hit are casual sit-down restaurants—such as Dine Equity Inc.'s Applebee's and Ruby Tuesday Inc. —because of the time it takes to order, get served and pay. Such establishments last year saw their steepest ever decline in lunch traffic, according to NPD.



Even fast-casual chains that cater more to harried customers with counter service instead of wait staff are experiencing slower growth. Lunchtime traffic at those restaurants—excluding Chipotle Mexican Grill Inc., which has suffered steep declines in the wake of disease outbreaks—grew 2% last year after posting growth of 5% or higher in each of the prior four years.

The pain is spreading to suppliers. Meat giant Tyson Foods Inc. recently said a 29% drop in quarterly earnings was due partly to the decline in restaurant traffic.

"Consumers are buying fresh foods, from supermarkets, and eating them at home as a replacement for eating out," Tyson Chief Executive Tom Hayes said.

The average price of a restaurant lunch has risen 19.5% to $7.59 since the recession, as rising labor costs pushed owners to raise menu prices—even as the cost of raw ingredients has fallen. According to the Bureau of Labor Statistics, the U.S. last year posted the longest stretch of falling grocery prices in more than 50 years.

"We believe significant food deflation was the primary culprit behind last year's weakness, favoring food at home pricing over food away from home pricing to a degree not seen outside of the global financial crisis," Sanford Bernstein analyst Sara Senatore said in a recent report on the restaurant industry.

More fundamental shifts in consumer behavior also are at play. The share of people doing at least some of their work at home—and who are unlikely to go out and eat—has fluctuated over the years, but was as low as 19% in 2003 and reached a high of 24% in 2015, according to the BLS. And the continued rise of online shopping means fewer trips to the mall—or a stop for a restaurant lunch there.

…

Despite the traffic decline, dollar sales at lunch were flat last year because of the menu price increases. But restaurants can't raise prices indefinitely. In fact, many now are offering lunch discounts to bring people out to eat.

…. Many restaurants are restructuring. Cosi Inc., Garden Fresh Corp. and Old Country Buffet owner Buffets Inc. recently have filed for chapter 11 bankruptcy protection. Others, like Ruby Tuesday and Famous Dave's of America Inc. DAVE **-0.30%** have been closing restaurants.

…..

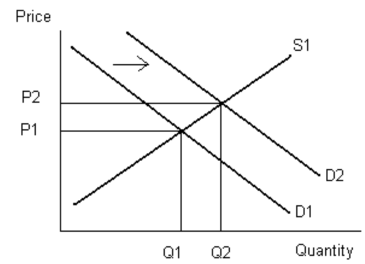
Josh Benn, managing director at corporate-finance advisory firm Duff & Phelps Corp., said new restaurant concepts, such as those that cater to consumers' desire for faster, healthier food, are on the rise.

"I think there's a death and regeneration happening in this whole industry," Mr. Benn said.

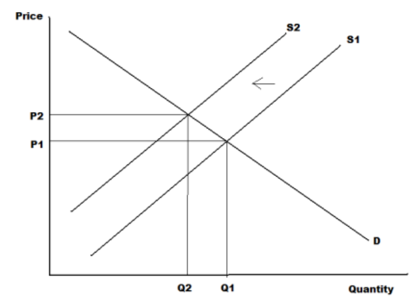
ANSWERS

Do NOT look at these answers until you have tried all of the questions above.

- News release: nuts are very, very good for you!
  This causes a change in preferences → increase in demand, increase in price and quantity

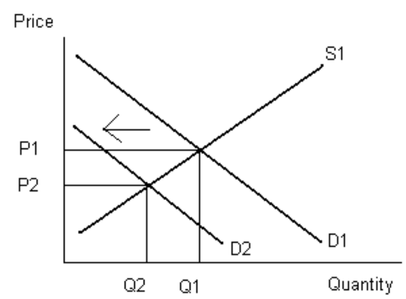


- Farmers must pay their workers higher wages to harvest nuts this year
  Higher wages = higher input costs → decrease in supply, increase in price, decrease in quantity



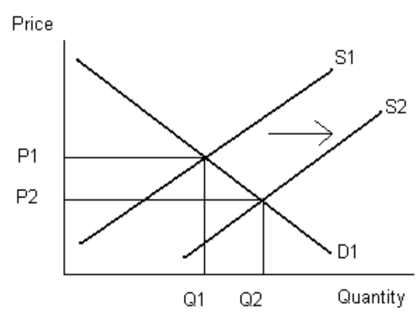
- The price of pretzels (another popular snack food) declines

Pretzels are a **substitute** for nuts. If pretzels become cheaper, some people will choose to substitute pretzels for nuts. This causes decrease in demand for nuts, decrease in price and decrease in quantity.



- Good weather produces a very large crop of nuts

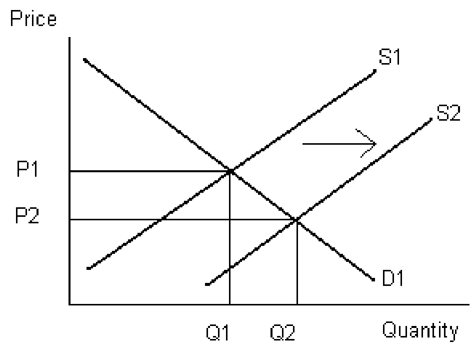
This causes increase in supply → increase in quantity, decrease in price



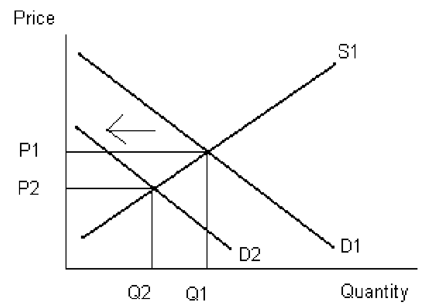
Imagine a new invention that allows each mine worker to mine twice as much coal. Predict how this will affect the equilibrium price and quantity in the market for coal and the market for heating oil.

Coal market: **new technology** causes increase in supply. Result: lower price, higher quantity of coal
Heating oil: a **substitute** (coal) has become less expensive. People buy less heating oil (decrease in demand) resulting in lower price, lower quantity.

Coal:



Heating oil:



Supply and demand in the real world:

1.) What factors have caused restaurant meal prices to increase? Are these factors related to supply, to demand or both?
The increase in meal prices is largely due to the increase in labor costs, which causes supply to decrease (i.e. shift left) due to the increased input cost. (The article states that demand is decreasing, which would push meal prices down).

2.) What factors have caused a decrease in the number of lunchtime restaurant meals? Is this due to supply, to demand or both?
This is mostly a demand change. People are more likely to eat lunch at home or at their desks. They are less likely to take the time for a longer, sit-down lunch in a restaurant. (However, the decrease in supply due to the higher input costs also leads to a decrease in restaurant meals).

3.) What is the economic term for the relationship between "food away from home" and "foods prepared at home?" Is this relationship shifting?
These goods are substitutes for each other. If "food away from home" becomes more expensive, people will increase their demand for "foods prepared at home."