

**CONCEPT: SUPPLY AND DEMAND TOGETHER – SHIFTS IN BOTH SUPPLY AND DEMAND**

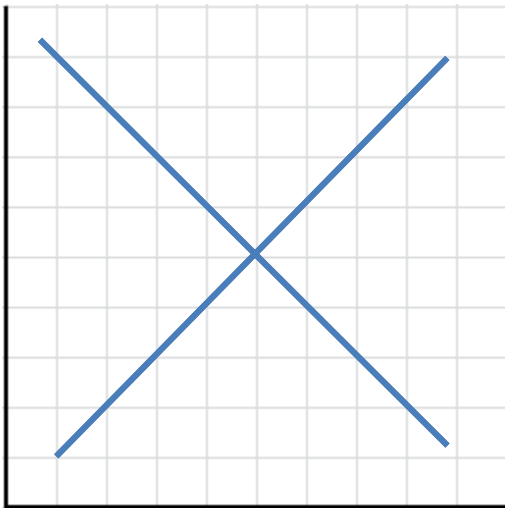
- When both supply and demand shift, the information about equilibrium price and quantity is sometimes less clear.

□ However, if both supply and demand shift, one variable (price or quantity) will always be \_\_\_\_\_

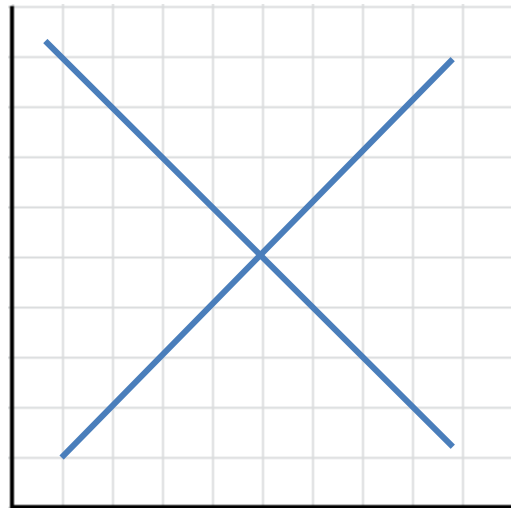
WARNING! The way you draw the shifts **will** make a difference when both supply and demand shift.

Supply shifts right, Demand shifts right

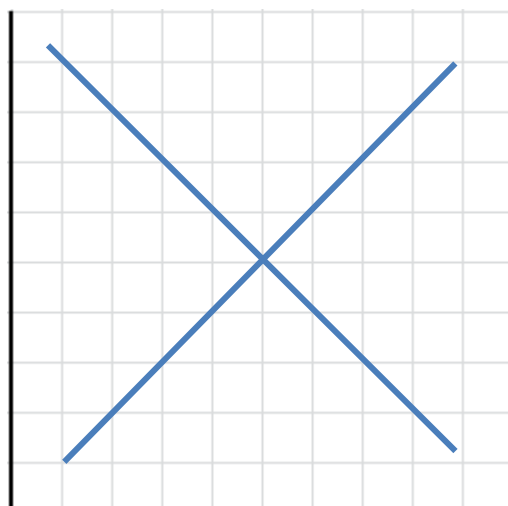
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Incorrect



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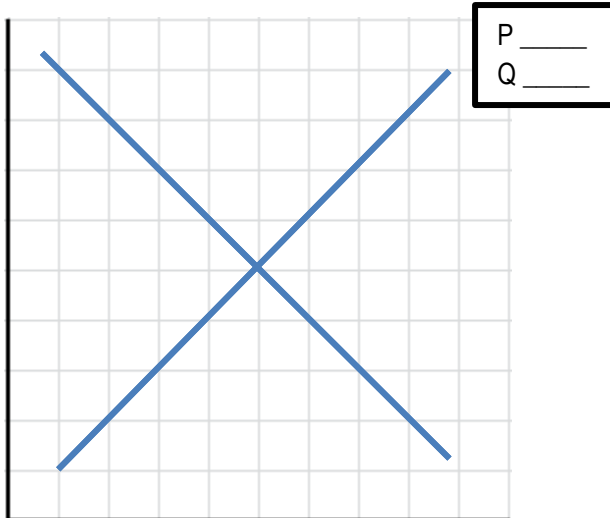


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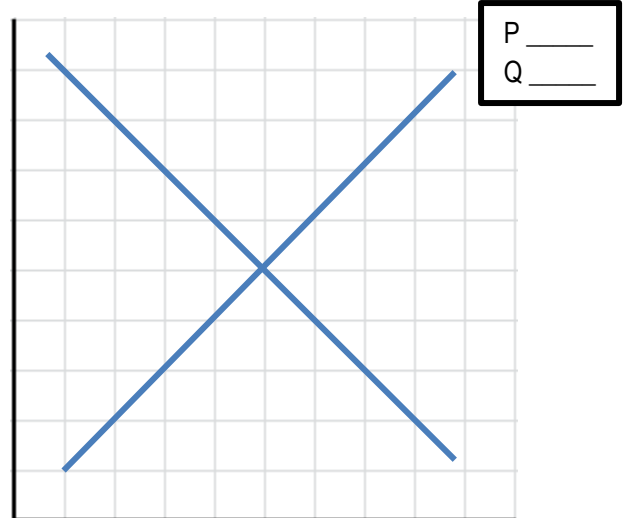
**Steps for Analyzing Changes in Equilibrium**

1. Decide whether the event shifts demand or supply (or both).
2. Decide the shift direction
3. Find new price and quantity:  $P_2$  and  $Q_2$
4. Compare to original:  $P_1$  and  $Q_1$

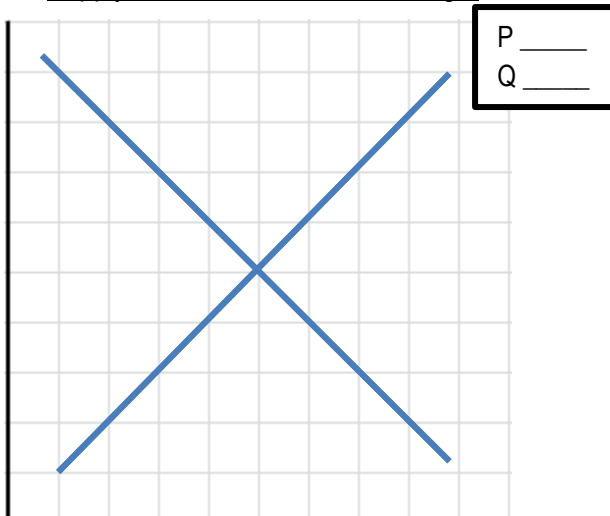
Supply shifts left, Demand shifts left



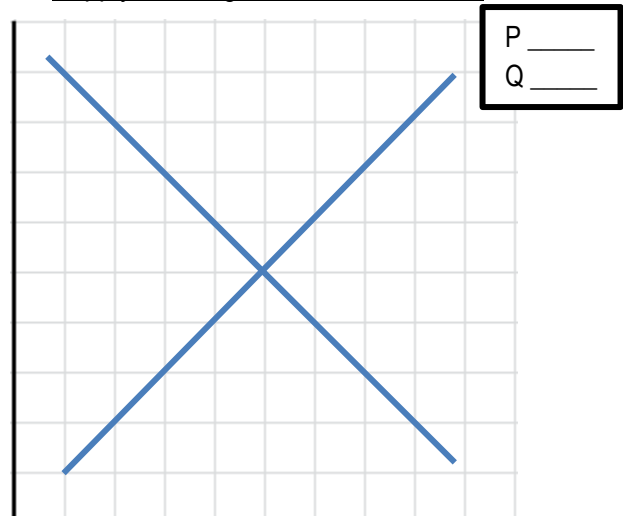
Supply shifts right, Demand shifts right



Supply shifts left, Demand shifts right



Supply shifts right, Demand shifts left



**PRACTICE:** What happens in the market for cream cheese if (1) the price of butter, a substitute for cream cheese, falls and (2) the cost of milk, an input in cream cheese production, rises?

- a. Equilibrium price rises, equilibrium quantity falls
- b. Equilibrium price falls, equilibrium quantity falls
- c. Equilibrium price ambiguous, equilibrium quantity rises
- d. Equilibrium price ambiguous, equilibrium quantity falls

**PRACTICE:** If the wages of bus drivers increases at the same time that the income of consumers decrease, what happens in the market for bus rides (assuming that bus rides are an inferior good)?

- a. Equilibrium price rises, equilibrium quantity ambiguous
- b. Equilibrium price rises, equilibrium quantity rises
- c. Equilibrium price falls, equilibrium quantity ambiguous
- d. Equilibrium price ambiguous, equilibrium quantity rises

**PRACTICE:** If producers of garden hoses have discovered new technology to improve production, while the number of gardeners increases, what happens in the market for garden hoses?

- a. Equilibrium price rises, equilibrium quantity ambiguous
- b. Equilibrium price falls, equilibrium quantity falls
- c. Equilibrium price ambiguous, equilibrium quantity rises
- d. Equilibrium price ambiguous, equilibrium quantity falls

**PRACTICE:** What happens in the market for tennis balls if (1) the price of tennis rackets, a complement for tennis balls, increases and (2) the price of baseballs, a substitute in production, decreases?

- a. Equilibrium price rises, equilibrium quantity ambiguous
- b. Equilibrium price ambiguous, equilibrium quantity falls
- c. Equilibrium price ambiguous, equilibrium quantity rises
- d. Equilibrium price falls, equilibrium quantity ambiguous

**PRACTICE:** What happens in the market for wheat if (1) the cost of fertilizer, an input in production, increases and (2) tornadoes ravages the Midwest, where wheat is grown?

- a. Equilibrium price rises, equilibrium quantity ambiguous
- b. Equilibrium price rises, equilibrium quantity falls
- c. Equilibrium price falls, equilibrium quantity rises
- d. Equilibrium price ambiguous, equilibrium quantity falls

**PRACTICE:** What happens in the market for online tutoring services if (1) the government decides to provide funding for online tutors and (2) the price of private tutoring, a substitute for online tutoring services, increases?

- a. Equilibrium price rises, equilibrium quantity ambiguous
- b. Equilibrium price ambiguous, equilibrium quantity falls
- c. Equilibrium price falls, equilibrium quantity ambiguous
- d. Equilibrium price ambiguous, equilibrium quantity rises