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Consider the following events: Scientists reveal that consumption of oranges decreases the risk of diabetes, and at the same time, farmers use a new fertilizer that makes orange trees more productive. Illustrate and explain what effect these changes have on the equilibrium price and quantity of oranges.

The consumption of oranges decreases the risk of diabetes, therefore; the demand for oranges increases at each price level. On the same time farmers use a new fertilizer that makes orange trees more productive which means that the supply increases at each price level, too. In both, the demand and the supply curves will be graphically seen as rightward shift.

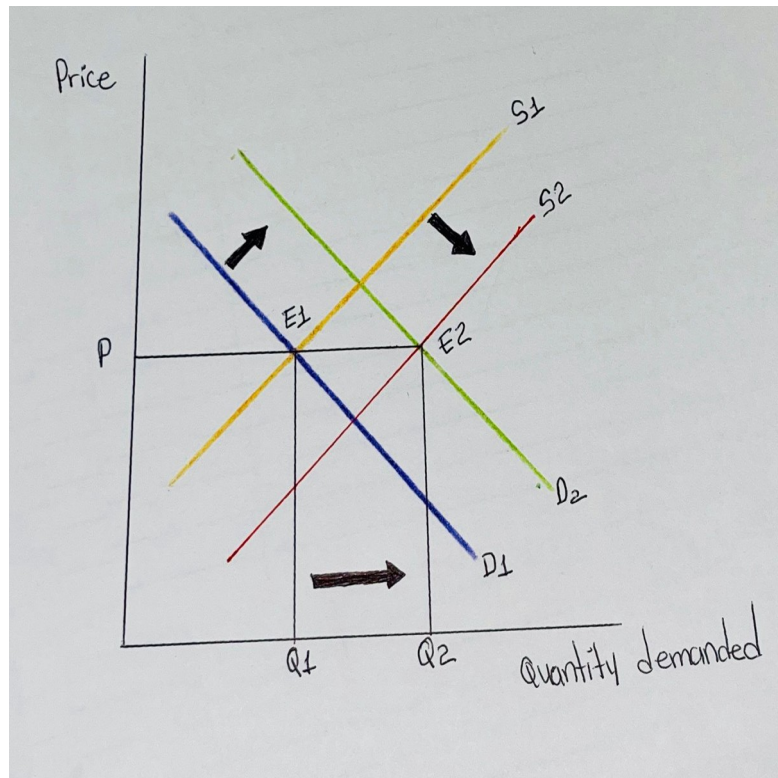There are three cases to consider:

Case 1

The change in the demand is greater than the change in supply.
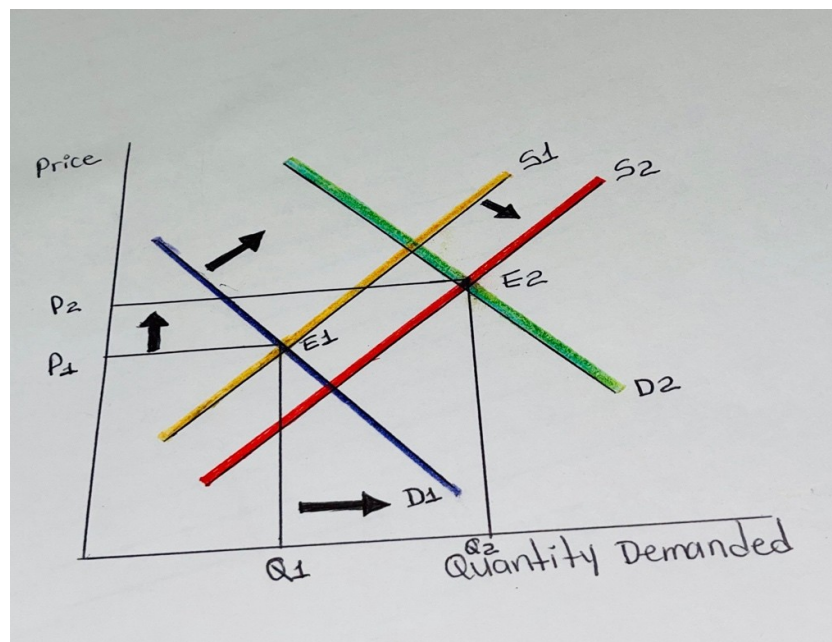
At the beginning the market of oranges is in equilibrium at E1. The equilibrium price is P1, and the equilibrium quantity is Q1. After the change, the demand curve shift from D1 to D2 and the supply curve shifts from S1 to S2. Therefore, the equilibrium shifts from E1 to E2. The equilibrium price is now P2, and equilibrium quantity is Q2 which means that the equilibrium price and quantity increases.
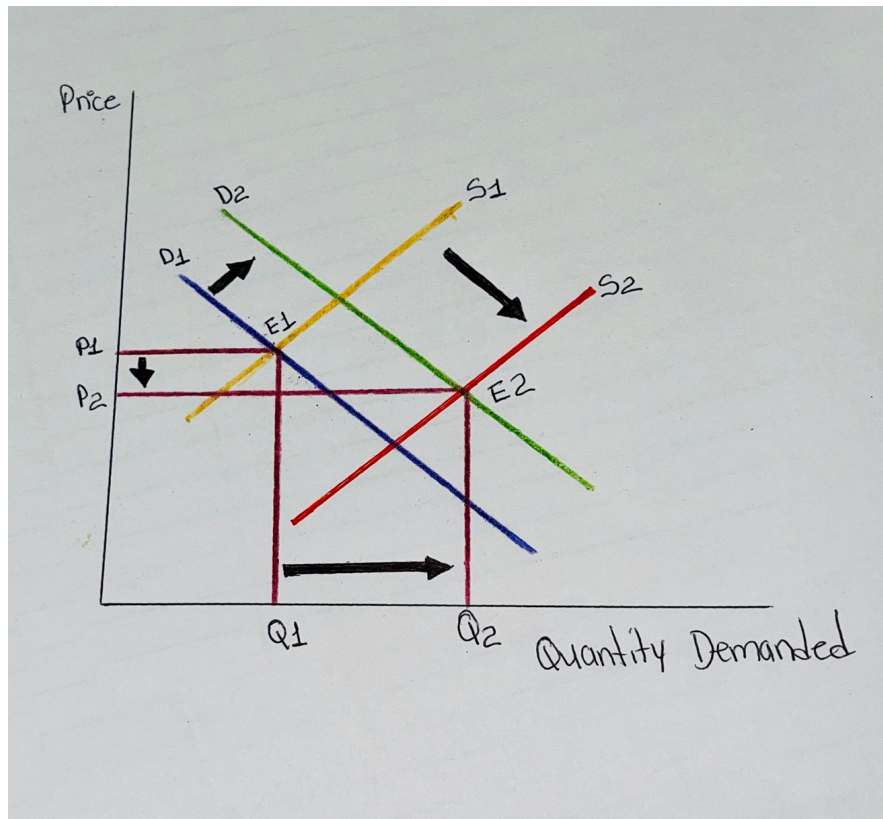
Case 2

The change in demand is equal to the change in supply.

At the beginning the market of oranges is in equilibrium at E1. The equilibrium price is P, and the
equilibrium quantity is Q1. After the change, the demand curve shift from D1 to D2 and the supply
curve shifts from S1 to S2. Therefore, the equilibrium shifts from E1 to E2. The equilibrium price
is now P, and equilibrium quantity is Q2 which means that the equilibrium price and quantity
increases. So, the equilibrium price remains the same and quantity increases.

Case 3

The change in the demand is lesser than the change in supply.

Initially the market of oranges is in equilibrium at E1. The equilibrium price is P1, and the equilibrium quantity is Q1. After the change, the demand curve shift from D1 to D2 and the supply curve shifts from S1 to S2. Resulting that the equilibrium shifts from E1 to E2. The equilibrium price is P2, and equilibrium quantity is Q2 which means that the equilibrium price decreases and quantity increases. we know that quantity increases but we don't know what happens to price because the two shifts affect price differently and we don't know the magnitude of each. Therefore, the equilibrium price is ambiguous.