

## 1.1: Demand



IB Economics: [www.ibdeconomics.com](http://www.ibdeconomics.com)

### 1.1 DEMAND: STUDENT LEARNING ACTIVITY

Answer the questions that follow.

#### 1. DEFINITIONS

Define the following terms:

- Goods
- Services
- Consumer
- Supplier
- Factors of production
- Quantity demanded
- Demand
- Market
- Competitive markets
- Competition
- Law of demand
- Effective demand
- Income effect of a change of price
- Substitution effect of a change of price
- Income
- Demand schedule
- Market demand
- Determinants of demand
- Demand curve
- Normal goods
- Inferior goods
- Related goods
- Compliments
- Substitutes
- Linear function
- Variable
- Demand function
- Coefficient
- Inverse relationship
- Ceteris paribus

[10 marks]

#### 2. SHORT-ANSWER QUESTIONS

1. Distinguish between a **market** and a **competitive market**. [4 marks]
2. Distinguish between **product** and **resource** markets. [4 marks]
3. Explain the relationship between price and quantity demanded. [4 marks]

## 1.1: Demand

4. Explain the role of the **substitution effect** and the **income effect** of a change in price in explaining the law of demand. **[4 marks]**
5. Distinguish between a **change in demand** and a change in **quantity demanded**. **[4 marks]**
6. Distinguish between a **change in demand** and a change in **quantity demanded**. **[4 marks]**
7. Use diagrams to contrast a movement along a demand curve and a shift of the demand curve. **[4 marks]**
8. Describe the relationship between an individual's consumer demand and the market demand. **[4 marks]**
9. Use diagrams to contrast an increase in demand and an increase in quantity demanded. **[4 marks]**
10. Explain how the following factors may change the demand for a good or a service:
  - i. Changes in income (for normal **and** inferior goods)
  - ii. Changes in preferences
  - iii. Prices of related goods (for complements **and** substitutes)
  - iv. Demographic changes**[10 marks]**

### 3. DEMAND SCHEDULES AND DEMAND CURVES

1. Sketch a demand curve from the following information: **[2 marks]**

Table 1: Demand schedule for chocolate bars

Price of a chocolate bar	Quantity of chocolate bars demanded each year
\$1	100
\$2	80
\$3	60
\$4	40
\$5	20

2. Using information in Table 1 above, construct a new demand schedule showing the effect of a 20 percent increase in demand for chocolate bars at each price. **[2 marks]**

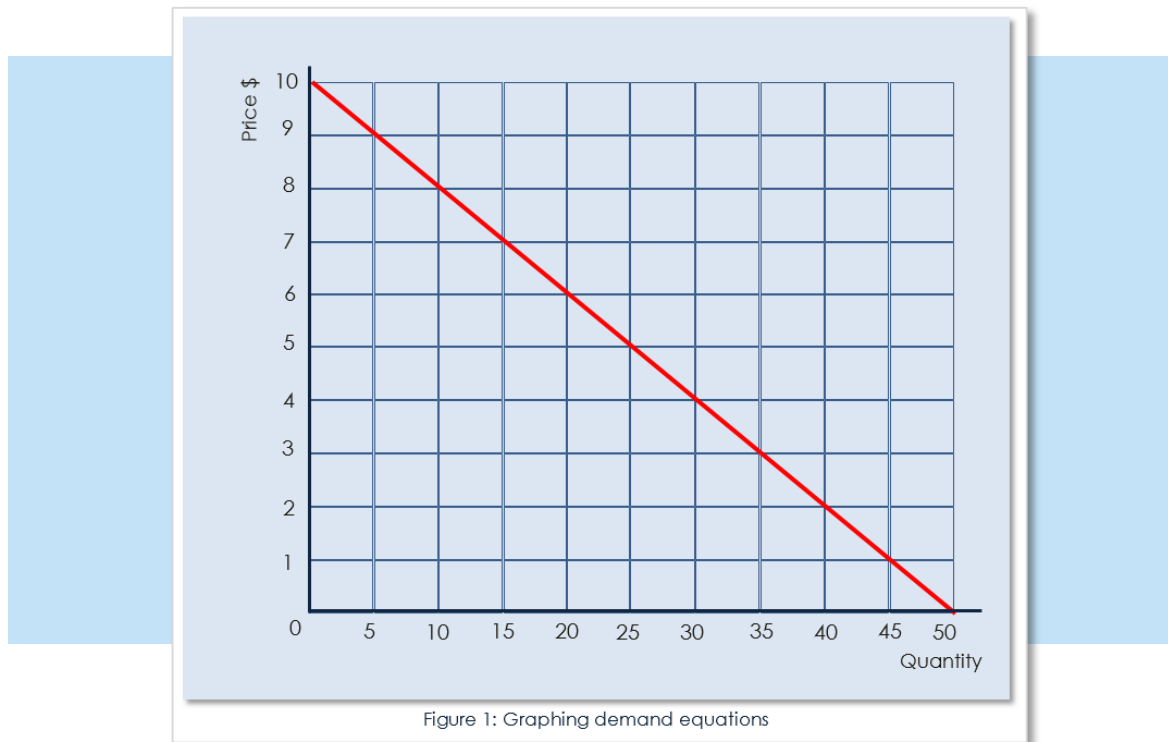
## 1.1: Demand

3. Use the following information in table 2 to sketch the market demand for the following good. **[4 marks]**

Table 2: Individual consumer demand for good A.

Price	Consumer 'A'	Consumer 'B'	Consumer 'C'	Consumer 'D'	Consumer 'E'	Consumer 'F'	Consumer 'G'
\$0.50	90	100	70	200	90	50	140
\$1.00	70	90	60	180	80	40	100
\$1.50	50	80	50	160	70	30	80
\$2.00	30	70	40	140	60	20	60
\$2.50	10	60	30	120	50	10	50

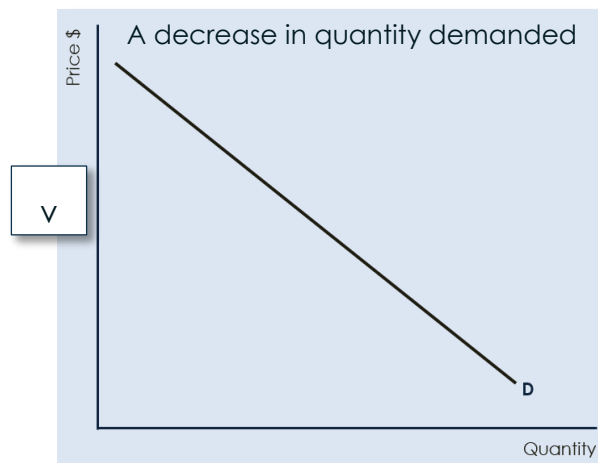
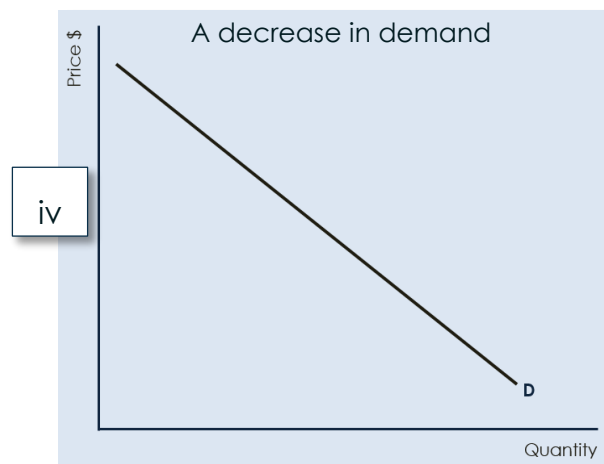
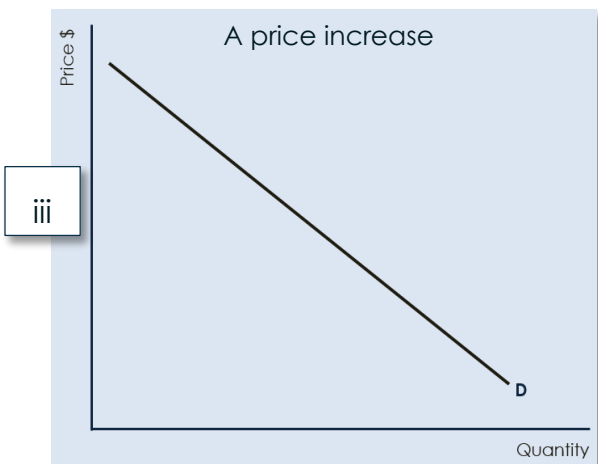
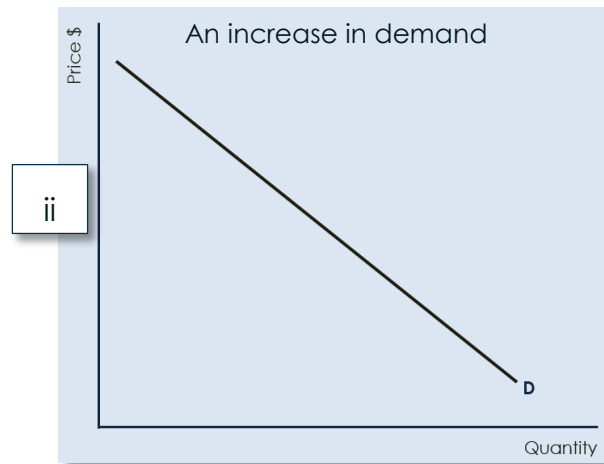
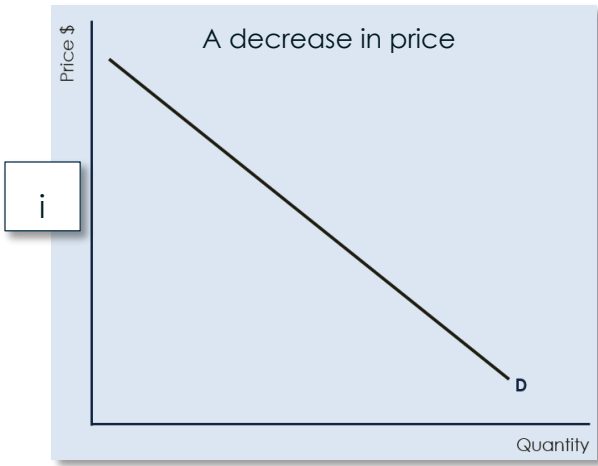
4. Construct a demand schedule using the information in the demand curve below. **[4 marks]**



5. Using diagrams, show the impact of the following on the demand curve for good A: **[12 marks]**
- Consumer incomes increase and good A is an inferior good
  - The number of consumers in the market for good A decreases
  - Consumer incomes increase and good A is a normal good
  - The price of substitute good B decreases
  - The price of complement good C increases
  - Better product marketing means good A is becoming more preferred.

## 1.1: Demand

6. Illustrate the change indicated by the title of each graph; label the changes fully. [12 marks]



## 1.1: Demand

### 4. MULTICHOICE QUESTIONS

Choose the best answer to each question.

**[40 marks]**

1. In order for a market to exist a product must:
  - i. Have sellers
  - ii. Have buyers
  - iii. Be scarce
  - a. i only
  - b. i and ii only
  - c. ii and iii only
  - d. i., ii and iii
  
2. Which of the following would most likely cause the demand for cars to shift up and right?
  - a. A fall in the price of cars
  - b. An increase in public transport prices
  - c. A decrease in the availability of credit
  - d. A rise in petrol prices
  
3. Demand for a product will increase if
  - a. The price of a substitute increases
  - b. There is an increase in its price
  - c. Its supply increases
  - d. Consumer income falls and the price of a complementary good increases
  
4. A market demand curve is found by the
  - a. Horizontal summation of the individual demand of all consumers at each price
  - b. Vertical summation of the individual demand of all consumers at each price
  - c. Horizontal summation of quantities demanded by many consumers at each price
  - d. Vertical summation of quantities demanded by many consumers at each price
  
5. Which of the following is an example of a condition that would shift a demand curve?
  - a. Increase in sales tax
  - b. Decrease in the cost of raw materials
  - c. Decrease in the price of a complement
  - d. Increase in subsidy
  
6. Demand that is backed by a consumer's willingness and ability to pay is termed
  - a. Competitive demand
  - b. Effective demand
  - c. Aggregate demand
  - d. Market demand
  
7. Which is not a feature of inferior goods?

## 1.1: Demand

- a. Income and quantity demanded are negatively related
  - b. Goods are likely to be low priced and basic
  - c. These goods will have higher priced alternatives
  - d. Applies to all goods in high demand during economic recessions
8. According to the law of demand, which factor will cause a demand curve to shift?
- a. The price of raw materials
  - b. A change in income tax rates
  - c. Technological increases
  - d. Factor substitution
9. Which factor would most likely cause the demand for diamonds to shift to the right?
- a. Consumers believe diamond prices will rise soon
  - b. A fall in the price of sapphires
  - c. An appreciation of the local currency
  - d. Trade sanctions on a major diamond producing country
10. Which of the following would shift the demand curve for beer to the left?
- a. A health scare linking alcohol to heart disease
  - b. An increase in a sales tax on beer
  - c. A successful advertising campaign encouraging beer consumption
  - d. An increase in real income
11. An increase in the price of good A causes a fall in demand for good B. This could be explained by
- a. A and B being in the same market
  - b. Good A being an inferior good
  - c. Goods A and B being substitutes
  - d. Goods A and B being complements
12. Which best describes the substitution effect of a price decrease for a normal good?
- a. Consumers buy more because their incomes have increased
  - b. It is the difference between real and nominal income
  - c. Consumers buy more because it is now relatively less expensive than other goods
  - d. It is the difference between a shift of the demand curve and a movement along it
13. What does not explain why a demand curves slopes downward to the left?
- a. Diminishing marginal utility
  - b. Income
  - c. Substitution effects
  - d. Opportunity cost
14. Which factor is not a determinant of demand?
- a. Price

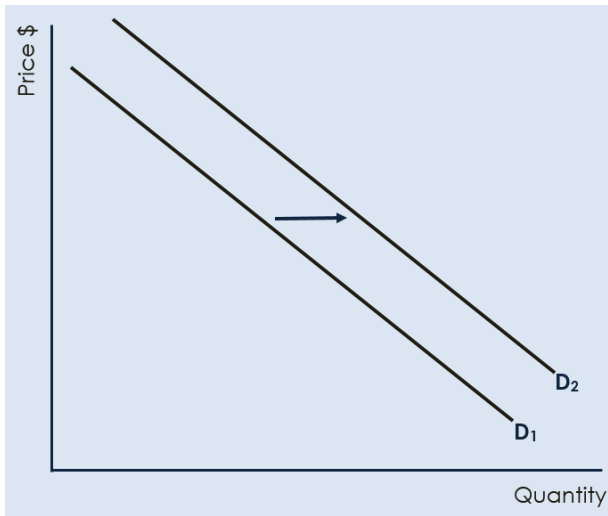
## 1.1: Demand

- b. Income
  - c. The level of consumer confidence
  - d. Sales tax (e.g., VAT and GST)
15. A movement along the demand curve for electric engine plugin cars would be caused by
- a. A rise in the price of electric cars
  - b. Successful advertising promotions of alternate fuel cars
  - c. A sales tax on all cars
  - d. A decrease in the price of petrol engine cars
16. A change in the demand for a good cannot arise as a result of changing
- a. Incomes
  - b. Prices
  - c. Consumer preferences
  - d. Technological improvements
17. What is most likely to happen if income rises
- a. A movement up the demand curve
  - b. Increase in demand
  - c. Increase in the quantity demanded
  - d. No effect
18. What is effect on demand for Coke when the price of Pepsi falls?
- a. Demand for Coke increases as it is now relatively less expensive
  - b. Demand for Coke decreases as it is now relatively less expensive
  - c. Demand for Coke increases as it is now relatively more expensive
  - d. Demand for Coke decreases as it is now relatively more expensive
19. A market demand curve is found by summing the quantity demanded of
- a. All consumers in the market at each price
  - b. A large number of consumers at each price level
  - c. Every consumer's vertical demand
  - d. All the goods and services produced in a given year
20. Which of the following will cause an increase in demand?
- a. A decrease in direct tax
  - b. A decrease in indirect tax
  - c. Increase in the price of a related good
  - d. None of these
21. Which factor will shift the demand for 'brand A' chewing gum?
- a. A price reduction
  - b. Better packaging
  - c. Increased cost of raw materials (e.g., sugar)
  - d. A sales tax
22. Which factor does not directly affect the demand for 'brand A' financial services?
- a. Consumer confidence in financial markets

## 1.1: Demand

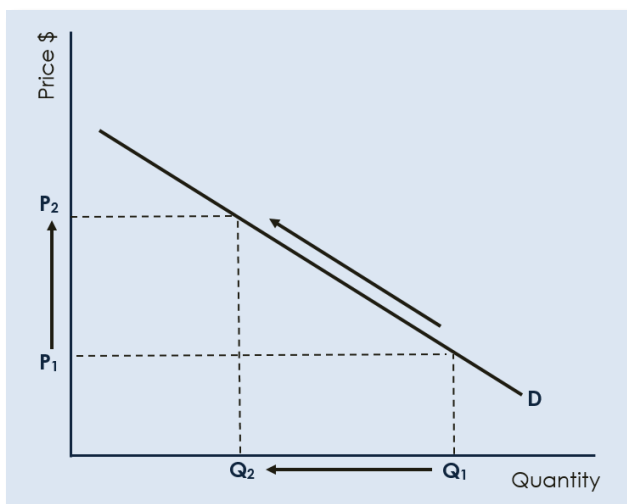
- b. Levels of customer incomes
- c. Fees charged to use the firm's financial services
- d. New, higher qualifications to work in this industry

23. Which is more likely to cause demand to shift from  $D_1$  to  $D_2$  in the market for laptop computers?



- a. An increase in the retail price of laptops
- b. A decrease in the retail price of laptops
- c. An income tax cut
- d. An increase in demand for tablet computers

24. The movement along the demand curve for pencils shown below, is caused by



- a. A change in the price of pencils
- b. The introduction of a new type of pencil
- c. A change in the price of pens
- d. An increase in the population

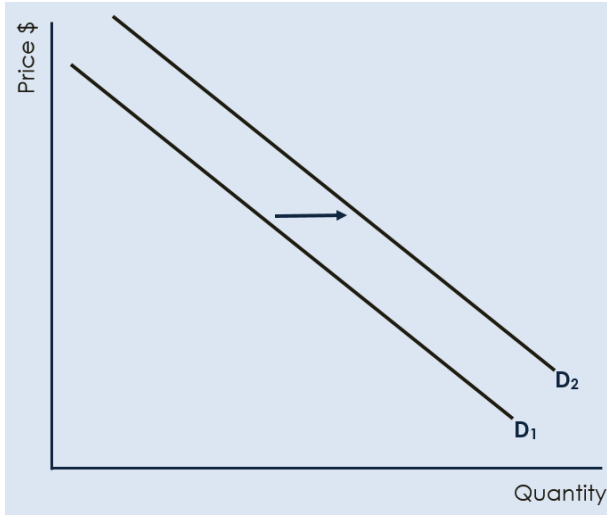


## 1.1: Demand

25. Which of the following will cause a shift of the demand curve to the left?
- A decrease in the price of a product
  - An increase in the price of a product
  - A decrease in the price of a substitute
  - A decrease in the price of a related good
26. Which of the following is a factor of demand?
- Supply
  - Wages
  - Indirect tax
  - Incomes
27. Quantity demanded will increase when
- Price of a product falls
  - The demand curve shifts to the right
  - The demand curve shifts to the left
  - There is a decrease in demand
28. Which of the following would cause a demand curve to shift?
- Changes in the costs of production to make the product
  - Changes in people's incomes
  - Changes in the price of the product
  - Changes in the conditions of supply
29. Demand for a product will increase if
- Price of the product falls
  - Price of a complement increases
  - Price of a substitute increases
  - There is an increase in direct tax
30. If the price of product A increases and the demand for product B increases, then
- A and B are compliments
  - A and B are substitutes
  - A is an inferior good
  - B is an inferior good
31. Which of the following is the best definition of consumer demand?
- The amount of good one person will buy
  - How much one individual will want at each price
  - The amount of a good or service one individual will buy
  - The amount of a good or service one individual will buy at various prices
32. Quantity demanded for a product will decrease if the
- Price of a substitute good increases
  - Price of a related good increases
  - Price of a product increases
  - Price of a substitute good falls

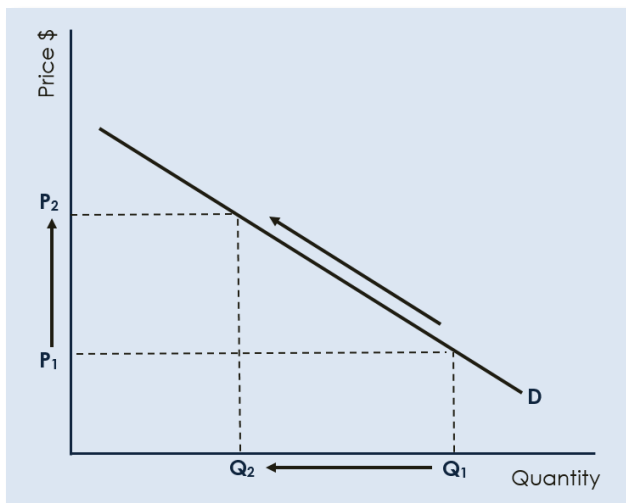
1.1: Demand

33. Which is more likely to cause demand to shift from  $D_1$  to  $D_2$  in the market for apples?



- a. An increase in the retail price of apples
- b. A decrease in the retail price of oranges
- c. A decrease in the retail price of oranges
- d. An increase in the retail price of apples

34. In the figure below, we know that



- a. A price increase has led to a decrease in  $Q_d$
- b. A price decrease has led to a decrease in  $Q_d$
- c. A price increase has led to an increase in  $Q_d$
- d. A price decrease has led to an increase in  $Q_d$

35. Which of the following is not a condition of demand?

- a. Price of a complement

## 1.1: Demand

- b. Direct tax
  - c. Indirect tax
  - d. Fashion
36. If the price of product A increases and the demand for product B decreases, then
- a. A and B are compliments
  - b. A and B are substitutes
  - c. A is an inferior good
  - d. B is an inferior good
37. If income increases and the demand for a good decreases then the good is
- a. A substitute
  - b. A complement
  - c. An inferior good
  - d. Normal good
38. If the price of product A decreases and the demand for product B decreases, then
- a. A and B are compliments
  - b. A and B are substitutes
  - c. A is an inferior good
  - d. B is an inferior good
39. If income decreases and the demand for a good decreases then the good is
- a. A substitute
  - b. A complement
  - c. An inferior good
  - d. Normal good
40. A decrease in price will cause
- a. An increase in demand
  - b. A shift of the demand curve to the right
  - c. A shift of the demand curve to the left
  - d. A movement along the demand curve

### 5. TRUE OR FALSE?

Indicate whether the following statements are true or false.

**[10 marks]**

1. Demand is represented by the whole demand curve.
2. An increase in price will increase Qd.
3. Qd is represented by a single point on the demand curve.
4. An increase in price is represented by a movement along the demand curve.
5. Only a change in price will shift the demand curve.
6. Competitive markets consist of large numbers of buyers and selling independently.
7. A normal good has increased demand as incomes increase.
8. A change in Qd is caused by a change in the factors of demand.
9. A decrease in the price of a substitute will decrease the demand for the related good.
10. An increase in the price of a complement will increase the demand for the related good.

## 1.1: Demand

### 6. DEMAND FUNCTIONS HL

1. In the demand function:  $Q_d = a - bP$ , explain what the following variables represent: **[4 marks]**
  - i.  $Q_d$
  - ii.  $P$
  - iii.  $a$
  - iv.  $-b$
  
2. Explain why the variable 'b' is a negative number? **[2 marks]**
  
3. Construct a demand schedule using the demand function:  $Q_d = 60 - 5P$ . **[2 marks]**
  
4. Consider the demand function:  $Q_d = 70 - 7P$ 
  - i. Find the x-axis ( $Q_d$ ) and y-axis ( $P$ ) intercepts. Plot the graph
  - ii. Calculate the  $Q_d$  when price ( $P$ ) = 2, 5 and 8 **[4 marks]**
  
5. Consider the demand function:  $Q_d = 70 - 7P$ . A successful promotional campaign means that now an additional 15 units are being demanded at each price.
  - i. State the new demand function
  - ii. Calculate the  $Q_d$  (i.e., when  $P = 0$ ) and  $P$  (i.e., when  $Q_d = 0$ ) intercepts
  - iii. Sketch both the old **and** new demand curves, to accurately show the change in demand. **[6 marks]**
  
6. Consider the demand function:  $Q_d = 70 - 7P$ . Shifting consumer preferences means that 20 less units are now being demanded at each price.
  - i. State the new demand function
  - ii. Calculate the  $Q_d$  and  $P$  intercepts and sketch the demand curve. **[4 marks]**
  
7. Consider the demand function:  $Q_d = 70 - 7P$ .
  - i. Identify the slope

If the slope changes to -5

  - ii. State the new demand function
  - iii. Calculate the  $Q_d$  and  $P$  intercepts and sketch the demand curve.
  - iv. Explain how the change in slope has affected the steepness of the of the demand curve.
  - v. Explain using data from your answers of the above questions whether consumer demand is either more or less responsive to price changes now that the slope of the demand curve is -5 and not -7. **[10 marks]**

## 1.1: Demand

## 7. MULTIPLE CHOICE QUESTIONS HL

Choose the appropriate response.

[15 marks]

1. In the demand function:  $Q_d = a - bP$ , what does '**a**' represent?
  - a. Slope
  - b. Quantity demanded
  - c. Price
  - d.  $Q_d$  when the price = 0 (x-axis intercept)
  
2. In the demand function:  $Q_d = a - bP$ , what does '**Qd**' represent?
  - a. Slope
  - b. Quantity demanded
  - c. Price
  - d.  $Q_d$  when the price = 0 (x-axis intercept)
  
3. In the demand function:  $Q_d = a - bP$ , what does '**P**' represent?
  - a. Slope
  - b. Quantity demanded
  - c. Price
  - d.  $Q_d$  when the price = 0 (x-axis intercept)
  
4. In the demand function:  $Q_d = a - bP$ , what does '**b**' represent?
  - a. Slope
  - b. Quantity demanded
  - c. Price
  - d.  $Q_d$  when the price = 0 (x-axis intercept)
  
5. The  $Q_d$  intercept of the demand curve:  $Q_d = 30 - 5P$  is
  - a. 5 units
  - b. -5 units
  - c. 30 units
  - d. 6 units
  
6. The slope of the demand curve:  $Q_d = 30 - 5P$  is
  - a. 5 units
  - b. -5 units
  - c. 30 units
  - d. 6 units
  
7.  $Q_d = 30 - 5P$ : what is the  $Q_d$  when the price = \$5?
  - a. 5 units
  - b. -5 units
  - c. 30 units

## 1.1: Demand

- d. 6 units
8.  $Q_d = 30 - 5P$ : what is the  $Q_d$  when the price = \$3?
- 10 units
  - 33 units
  - 5 units
  - 15 units
9. At all prices, the lowest level of demand is present in which demand curve?
- $Q_d = 500 - 50P$
  - $Q_d = 650 - 60P$
  - $Q_d = 700 - 60P$
  - $Q_d = 800 - 50P$
10. If demand is:  $Q_d = 600 - 25P$ , what is the price when  $Q_d = 0$ ? (y-intercept)
- 24
  - 26
  - 32
  - 34
11. If demand is:  $Q_d = 600 - 25P$ , what is the  $Q_d$  when  $P = 0$ ? (x-intercept)
- 25
  - 25
  - 450
  - 600
12. If demand is:  $Q_d = 90 - 10P$ , what is the price when  $Q_d = 0$ ? (y-intercept)
- 10
  - 10
  - 9
  - 15
13. If demand is:  $Q_d = 90 - 10P$ , what is the  $Q_d$  when  $P = 0$ ? (x-intercept)
- 90
  - 45
  - 15
  - 9
14.  $Q_d = 90 - 10P$ : what is the  $Q_d$  when the price = \$5?
- 10 units
  - 90 units
  - 30 units
  - 40 units

**1.1: Demand**

15.  $Q_d = 90 - 10P$ : what is the  $Q_d$  when the price = \$3?
- a. 10 units
  - b. 20 units
  - c. 30 units
  - d. 60 units

Source: [www.IBDeconomics.com](http://www.IBDeconomics.com)