# Graphs of Functions - Unit No. 10 Test # 1

Time: 30 Minutes Total Marks: 20

## Part A: Multiple Choice Questions (1×5 = 5 marks)

1. The y-intercept of $y = -2x - 1$ is:

(a) -2

(b) 2

(c) -1

(d) 1

2. $y = -3x^3 + 7$ is which type of function?

(a) exponential

(b) cubic

(c) linear

(d) reciprocal

3. $y = 5x$ is which type of function?

(a) linear

(b) quadratic

(c) cubic

(d) exponential

4. Slope of the line $y = 5x + 3$ is:

(a) 3

(b) -3

(c) 5

(d) -5

5. $x = 5$ represents:

(a) x-axis

(b) y-axis

(c) line ∥ to x-axis

(d) line ∥ to y-axis

## Part B: Short Questions (2×5 = 10 marks)

1. Define quadratic function. (Definition)

2. Determine the y-intercept of $y = -2x + 4$.

3. Sketch and label the graph of $y = 3 - x$ for $x = -2$ to 4.

4. What type of graph does $y = x^2 - 9$ represent?

5. Evaluate the function $y = x^2 - 3$ for $x = -2$ to 2.

## Part C: Long Question (5 marks)

1. A company manufactures bags. Cost function: $C(x) = 1200 + 20x$, Revenue function: $R(x) = 50x$. Plot both and find break-even point.

# Graphs of Functions - Unit No. 10 Test # 2

Time: 30 Minutes Total Marks: 20

## Part A: Multiple Choice Questions (1×5 = 5 marks)

1. $y = -3x^3 + 7$ is which type of function?

   (a) exponential

   (b) cubic

   (c) linear

   (d) reciprocal

2. $y = 5x$ is which type of function?

   (a) linear

   (b) quadratic

   (c) cubic

   (d) exponential

3. Slope of the line $y = 5x + 3$ is:

   (a) 3

   (b) -3

   (c) 5

   (d) -5

4. $x = 5$ represents:

   (a) x-axis

   (b) y-axis

   (c) line ∥ to x-axis

   (d) line ∥ to y-axis

5. The graph of $y = x^2$ cuts the x-axis at:

   (a) $x = 0$

   (b) $x = 1$

(c) $x = -1$

(d) $x = 2$

## Part B: Short Questions (2×5 = 10 marks)

1. Define slope of a line. (Definition)

2. What type of graph does $y = x^2 - 9$ represent?

3. Evaluate the function $y = x^2 - 3$ for $x = -2$ to 2.

4. Sketch the graph of $y = 5x$ and interpret its slope.

5. Describe the shape of the graph $y = -x^2 + 5$.

## Part C: Long Question (5 marks)

1. Ali manufactures shirts. Cost function: $C(x) = 1500 + 10x + 0.2x^2$. Plot for $0 \leq x \leq 150$ and find cost of 200 shirts.

# Graphs of Functions - Unit No. 10 Test # 3

Time: 30 Minutes Total Marks: 20

## Part A: Multiple Choice Questions (1×5 = 5 marks)

1. y = 5x is which type of function?

(a) linear

(b) quadratic

(c) cubic

(d) exponential

2. Slope of the line y = 5x + 3 is:

(a) 3

(b) -3

(c) 5

(d) -5

3. x = 5 represents:

(a) x-axis

(b) y-axis

(c) line ∥ to x-axis

(d) line ∥ to y-axis

4. The graph of $y = x^2$ cuts the x-axis at:

(a) x = 0

(b) x = 1

(c) x = -1

(d) x = 2

5. The graph of $y = -x^2 + 5$ opens:

(a) upward

(b) downward

(c) left side

(d) right side

## Part B: Short Questions (2×5 = 10 marks)

1. Define linear function. (Definition)

2. Sketch the graph of $y = 5x$ and interpret its slope.

3. Describe the shape of the graph $y = -x^2 + 5$.

4. Identify the domain and range of $y = 2/x$.

5. State the axis of symmetry for $y = x^2 - 4x + 1$.

## Part C: Long Question (5 marks)

1. Plot the graph of $y = 3x^2 + x + 1$ and find the gradient of the tangent at (1,5).

# Graphs of Functions - Unit No. 10 Test # 4

Time: 30 Minutes Total Marks: 20

## Part A: Multiple Choice Questions (1×5 = 5 marks)

1. Slope of the line $y = 5x + 3$ is:

(a) 3

(b) -3

(c) 5

(d) -5

2. $x = 5$ represents:

(a) x-axis

(b) y-axis

(c) line ∥ to x-axis

(d) line ∥ to y-axis

3. The graph of $y = x^2$ cuts the x-axis at:

(a) $x = 0$

(b) $x = 1$

(c) $x = -1$

(d) $x = 2$

4. The graph of $y = -x^2 + 5$ opens:

(a) upward

(b) downward

(c) left side

(d) right side

5. Reciprocal function is:

(a) $y = 7x$

(b) $y = x^2$

(c) $y = 2x^2$

(d) $y = 5x^3$

## Part B: Short Questions (2×5 = 10 marks)

1. Define exponential function. (Definition)

2. Identify the domain and range of $y = 2/x$.

3. State the axis of symmetry for $y = x^2 - 4x + 1$.

4. Find the coordinates where $y = x^2 - 3$ intersects the x-axis.

5. Describe the transformation in $y = (x - 2)^2 + 3$.

## Part C: Long Question (5 marks)

1. Plot the supply and demand functions $Pd = 400 - 5Q$ and $Ps = 3Q + 24$ for $Q = 0$ to 100.

# Graphs of Functions - Unit No. 10 Test # 5

Time: 30 Minutes Total Marks: 20

## Part A: Multiple Choice Questions (1×5 = 5 marks)

1. $y = -3x^3 + 7$ is which type of function?

(a) exponential

(b) cubic

(c) linear

(d) reciprocal

2. The y-intercept of $y = -2x - 1$ is:

(a) -2

(b) 2

(c) -1

(d) 1

3. Slope of the line $y = 5x + 3$ is:

(a) 3

(b) -3

(c) 5

(d) -5

4. Reciprocal function is:

(a) $y = 7x$

(b) $y = x^2$

(c) $y = 2x^2$

(d) $y = 5x^3$

5. $x = 5$ represents:

(a) x-axis

(b) y-axis

(c) line ∥ to x-axis

(d) line ∥ to y-axis

## Part B: Short Questions (2×5 = 10 marks)

1. Define break-even point. (Definition)

2. Evaluate the function $y = x^2 - 3$ for $x = -2$ to 2.

3. What type of graph does $y = x^2 - 9$ represent?

4. Identify the domain and range of $y = 2/x$.

5. Sketch and label the graph of $y = 3 - x$ for $x = -2$ to 4.

## Part C: Long Question (5 marks)

1. Plot the graph of $y = 2x^2 - 4x + 3$ for $x = -1$ to 3 and find the gradient of the tangent at (2,3).