MTH101 Solution: Practice Questions
Lecture No.8: Graphs of Functions
Lecture No.9: Limits

Choose the correct option for the following questions:

1) If a vertical line insects the graph of the equation $y = f(x)$ at two points, then which of the following is true?

- **I.** It represents a function.
- **II.** It represents a parabola.
- **III.** It represents a straight line.
- **IV.** It does not represent a function.

2) Which of the following is the reflection of the graph of $y = f(x)$ about *y*-axis?

- **I.** $y = -f(x)$
- **II.** $y = f(-x)$
- **III.** $-y = -f(x)$
- **IV.** $-y = f(-x)$

3) Given the graph of a function $y = f(x)$ and a constant *c*, the graph of $y = f(x) + \text{c}$ can be obtained by _______.

- **I.** Translating the graph of $y = f(x)$ up by c units.
- **II.** Translating the graph of $y = f(x)$ down by c units.
- **III.** Translating the graph of $y = f(x)$ right by c units.
- **IV.** Translating the graph of $y = f(x)$ left by c units.

4) Given the graph of a function $y = f(x)$ and a constant *c*, the graph of $y = f(x - c)$ can be obtained by _______.

- **I.** Translating the graph of $y = f(x)$ up by c units.
- **II.** Translating the graph of $y = f(x)$ down by c units.
- **III.** Translating the graph of $y = f(x)$ right by c units.
- **IV.** Translating the graph of $y = f(x)$ left by c units.

5) Which of the following is the reflection of the graph of $y = f(x)$ about *x*-axis?

- **I.** $y = -f(x)$
- **II.** $y = f(-x)$
- **III.** $-y = -f(x)$
- **IV.** $-y = f(-x)$

Q.No.6: If $\lim_{x\to 8^-} h(x) = 18 + c$ and $\lim_{x\to 8^+} h(x) = 7$ then find the value of '$\boldsymbol{c}$' so that $\lim_{x\to 8} h(x)$ exists.

Answer: $c = -11$

Q.No.7: Find the limit by using the definition of absolute value $\lim_{x\to 0^+} \frac{x}{|2x|}$.

Answer: $\frac{1}{2}$

Q.No.8: Find the limit by using the definition of absolute value $\lim_{x\to 0^-} \frac{|x+5|}{x+5}$.

Answer: -1

Q.No.9: Evaluate: $\lim_{x\to\infty} \frac{x^2 - 3x + 1}{x^3 + 2x^2 - 5x + 3}$.

Answer: 0

Q.No.10: Evaluate: $\lim_{z\to\infty} \frac{z^3 + 2z^2 - 5z + 3}{z^2 - 3z + 1}$.

Answer: ∞