PreCal Homework 1.2 Worksheet

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Multiple Choice Questions

For each question, four alternative choices are given, of which only one is correct. You have to select the correct alternative and mark it in the appropriate option.

1. Determine whether the function below has a maximum or minimum.
   $y = x^2$

   a. The maximum is at (0, 0)
   b. The minimum is at (0, 0)
   c. The maximum is at $(-\infty, 0)$
   d. No minimum or maximum

2. Identify any local extrema in the graph given below.

   a. There is a local maximum at (0, 2).
   b. There is a local maximum at (-1, 2).
   c. There are no local extrema.
   d. There is a local minimum at (2, 2).

3. Identify any local extrema in the graph given below.

   a. Local minimums: (0.4, -1), (2.5, -13). Local maximums: (1.5, -22), (1, 0).
   b. Local minimums: (0.4, 1), (2.5, -13). Local maximums: (-1.5, 22), (1, 0).
   c. Local minimums: (0.4, -1), (2.5, 13). Local maximums: (-1.5, 22), (1, 0).
   d. Local minimums: (0.4, -1), (2.5, -13). Local maximums: (-1.5, 22), (1, 0).

4. Determine whether the function below has a maximum or minimum.
   $y = |x|$

   a. No minimum or maximum
   b. The minimum is at $(-\infty, 0)$
   c. The minimum is at (0, 0)
   d. The maximum is at (0, 0)

5. Identify any local minimum in the graph given below.

   a. There is a local minimum at (1, 0).
   b. There are no local extrema.
   c. There is a local maximum at (-1, 2).
   d. There is a local minimum at (3, 0).

6. Identify the intervals (if any) where the function is decreasing.

   a. $x \in (-0.3, -3)$
   b. $x \in (0.3, 3)$
   c. $x \in (0.3, -3)$
   d. $x \in (-0.3, 3)$

7. Identify the intervals (if any) where the function is increasing.

   a. $x \in (3, -3)$
   b. $x \in (-3, \infty)$

c. $x \in (0, \infty)$
d. $x \in (3, \infty)$

8. Identify the intervals (if any) where the function is decreasing.

a. $x \in (-\infty, -3)$
b. $x \in (-\infty, 3)$
c. $x \in (\infty, 3)$
d. $x \in (\infty, -3)$

9. Identify the intervals (if any) where the function is increasing.

a. $x \in (-\infty, \infty)$
b. $x \in (0, -\infty)$
c. $x \in (0, \infty)$
d. $x \in (-\infty, 0)$

10. Identify the intervals (if any) where the function is decreasing.

a. $x \in (-\pi, \frac{-\pi}{2}) \cup (\frac{\pi}{2}, \pi)$
b. $x \in (\pi, \frac{\pi}{2}) \cup (\frac{\pi}{2}, \pi)$
c. $x \in (-\pi, \frac{\pi}{3}) \cup (\frac{\pi}{2}, \pi)$
d. $x \in (-\pi, \frac{i}{2}) \cup (\frac{\pi}{3}, \pi)$