

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Find the range of the function.

1) $y = 9x^6$

A) $[-9, \infty)$

B) $[0, \infty)$

C) $[9, \infty)$

D) $(-\infty, \infty)$

2) $f(x) = \frac{10}{4-x}$

A) $(-\infty, \infty)$

B) $(-\infty, 0) \cup (0, \infty)$

C) $(0, \infty)$

D) $(-\infty, 4) \cup (4, \infty)$

3) $f(x) = (x+4)^2 + 8$

A) $(-\infty, \infty)$

B) $(8, \infty)$

C) $(-8, \infty)$

D) $[8, \infty)$

4) $f(x) = 3 + \sqrt{8-x}$

A) $[8, \infty)$

B) $(-\infty, \infty)$

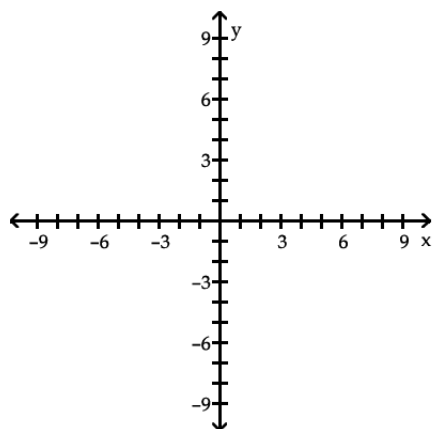
C) $(-\infty, 3]$

D) $[3, \infty)$

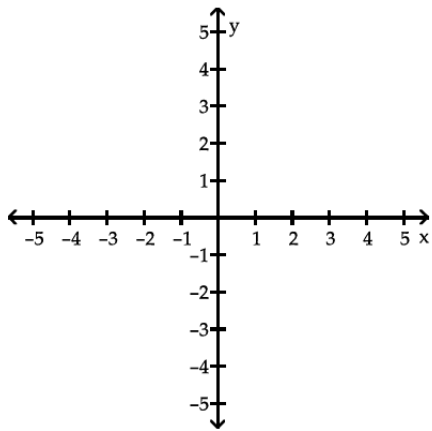
SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Graph the function and determine if it has a point of discontinuity at $x = 0$. If there is a discontinuity, tell whether it is removable or non-removable.

5) $g(x) = \frac{x^2 - 4x}{x}$

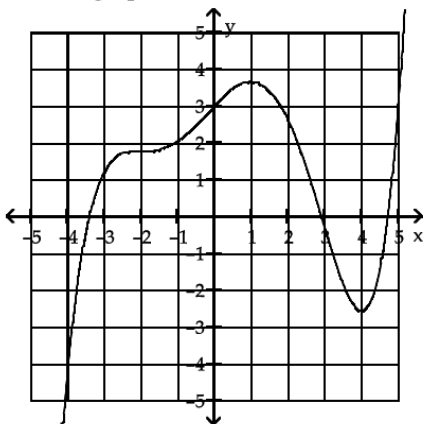


6) $h(x) = \frac{x}{x-3}$



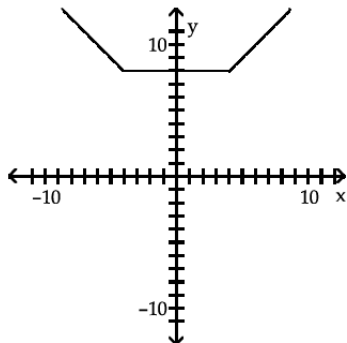
Solve the problem.

7) Use the graph of f to estimate the local maximum and local minimum.



Determine the intervals on which the function is increasing, decreasing, and constant.

8)



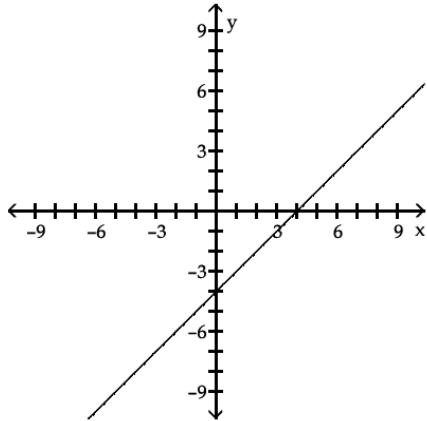
Answer Key

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

- 1) B
- 2) B
- 3) D
- 4) D

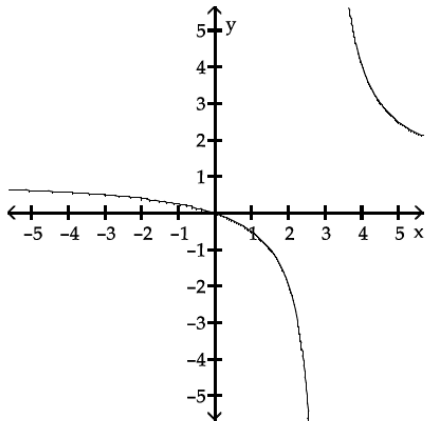
SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

5)



Yes; removable

6)



No

- 7) Local maximum: approx. 3.66; local minimum: approx. -2.55
- 8) Increasing on $(4, \infty)$; Decreasing on $(-\infty, -4)$; Constant on $(-4, 4)$