

Piecewise Functions

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

Find the requested value.

1) $f(-3)$ for $f(x) = \begin{cases} 3x, & \text{if } x \leq -1 \\ x-2, & \text{if } x > -1 \end{cases}$ 1) _____
A) -5 B) 1 C) 9 D) -9

2) $f(7)$ for $f(x) = \begin{cases} 3x+6, & \text{if } x \leq 0 \\ 6-6x, & \text{if } 0 < x < 6 \\ x, & \text{if } x \geq 6 \end{cases}$ 2) _____
A) 27 B) 6 C) 7 D) -36

3) $f(8)$ for $f(x) = \begin{cases} 6x+1, & \text{if } x < 1 \\ 8x, & \text{if } 8 \leq x \leq 11 \\ 8-4x, & \text{if } x > 11 \end{cases}$ 3) _____
A) -24 B) 45 C) 7 D) 64

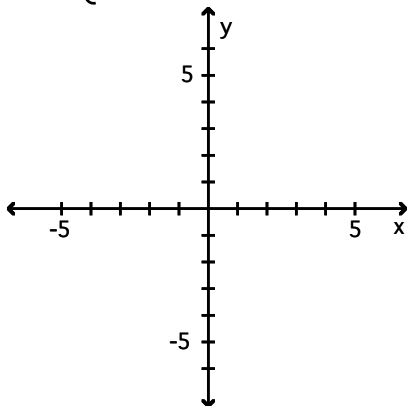
Evaluate the piecewise function at the given value of the independent variable.

4) $g(x) = \begin{cases} \frac{x^2+8}{x-3} & \text{if } x \neq 3 \\ x+6 & \text{if } x = 3 \end{cases}$; $g(7)$ 4) _____
A) $\frac{57}{4}$ B) 7 C) $\frac{15}{4}$ D) 13

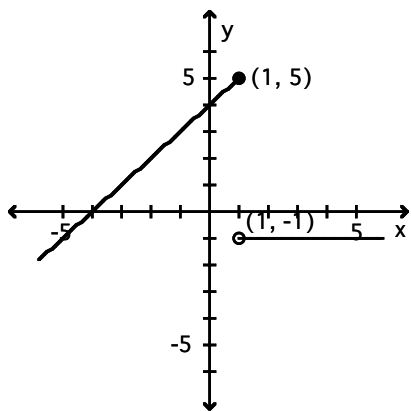
5) $f(x) = \begin{cases} x+1 & \text{if } x > 4 \\ -(x+1) & \text{if } x \leq 4 \end{cases}$; $f(1)$ 5) _____
A) 2 B) -2 C) 18 D) 1

Graph the function.

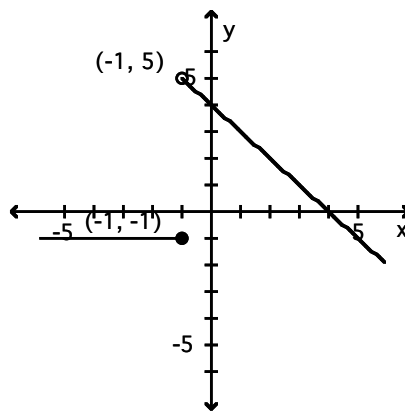
6) $f(x) = \begin{cases} x+4 & \text{if } x < 1 \\ -1 & \text{if } x \geq 1 \end{cases}$ 6) _____



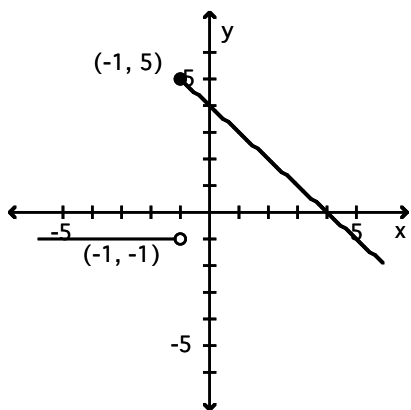
A)



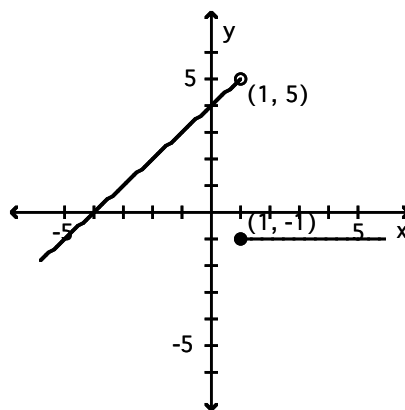
B)



C)



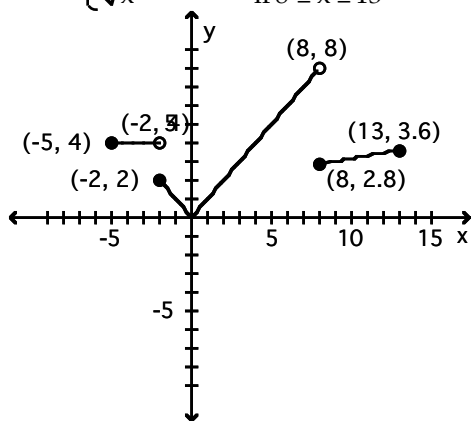
D)



Based on the graph, find the range of $y = f(x)$.

$$7) f(x) = \begin{cases} 4 & \text{if } -5 \leq x < -2 \\ |x| & \text{if } -2 \leq x < 8 \\ \sqrt{x} & \text{if } 8 \leq x \leq 13 \end{cases}$$

7) _____



A) $[0, \infty)$

B) $[0, 8]$

C) $[0, \sqrt{13}]$

D) $[0, 8)$

Answer Key

Testname: PIECEWISE FUNCTIONS

- 1) D
- 2) C
- 3) D
- 4) A
- 5) B
- 6) D
- 7) D