

Precalculus

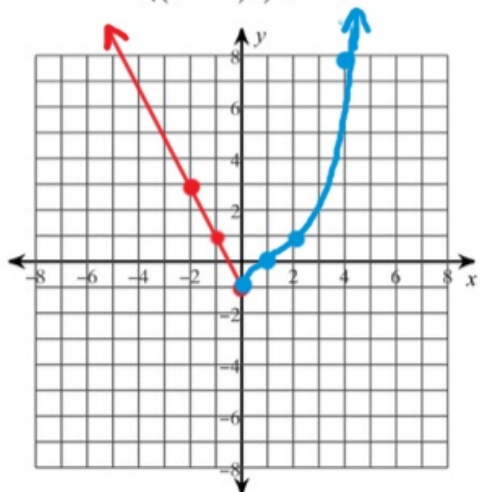
Name \_\_\_\_\_ ID: 1

### Piece-Wise Function Practice

Date \_\_\_\_\_ Period \_\_\_\_\_

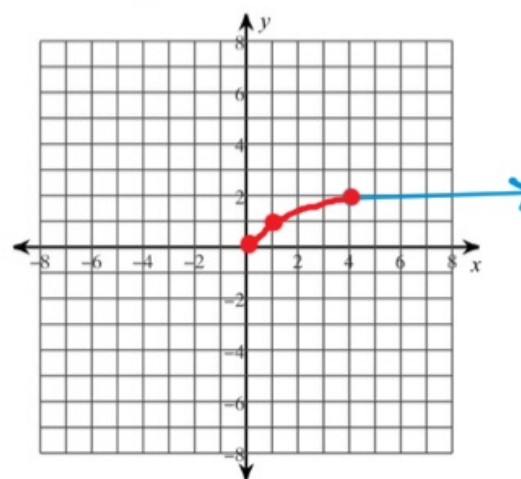
Sketch the graph of each function. Then state if the function is continuous.

$$1) w(x) = \begin{cases} -2x - 1, & x \leq 0 \\ (x - 1)^3, & x > 0 \end{cases}$$



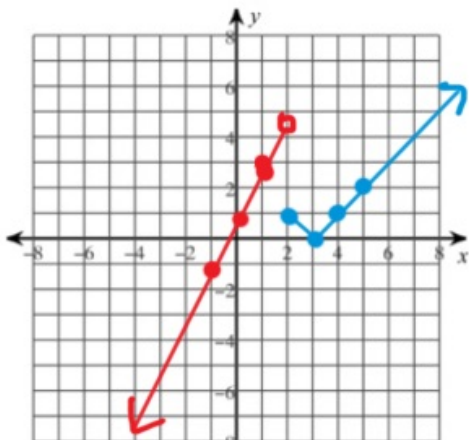
continuous

$$2) w(x) = \begin{cases} \sqrt{x}, & x < 4 \\ 2, & x \geq 4 \end{cases}$$



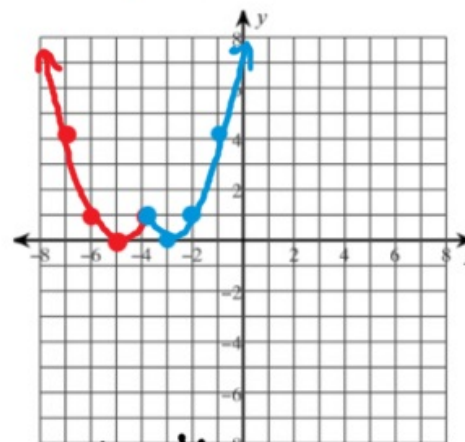
continuous

3)  $g(x) = \begin{cases} 2x + 1, & x < 2 \\ |x - 3|, & x \geq 2 \end{cases}$



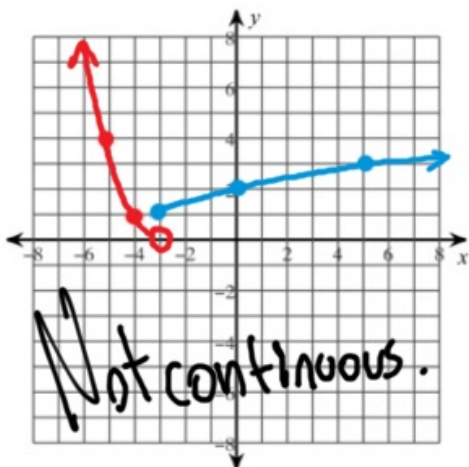
Not continuous.

4)  $w(x) = \begin{cases} (x + 5)^2, & x \leq -4 \\ (x + 3)^2, & x > -4 \end{cases}$



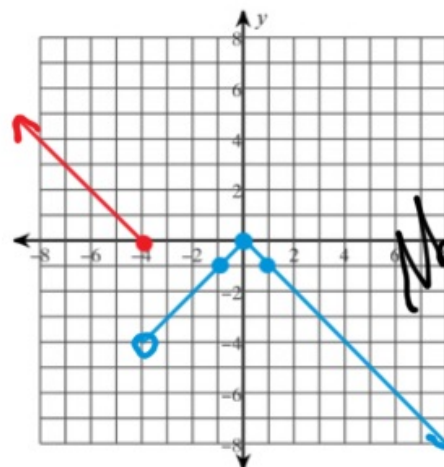
Continuous

5)  $g(x) = \begin{cases} (x + 3)^2, & x < -3 \\ \sqrt{x + 4}, & x \geq -3 \end{cases}$



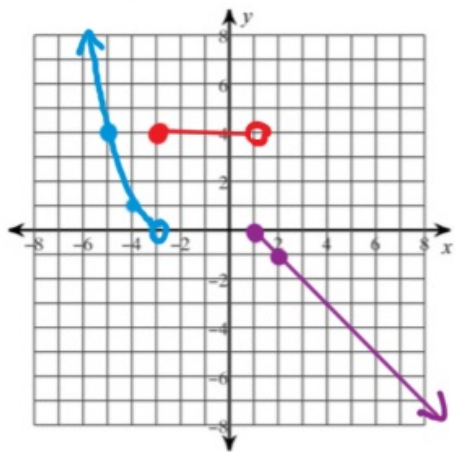
Not continuous.

6)  $h(x) = \begin{cases} |x + 4|, & x \leq -4 \\ -|x|, & x > -4 \end{cases}$

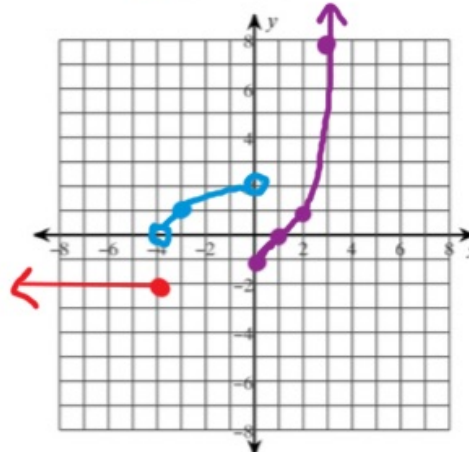


Not continuous.

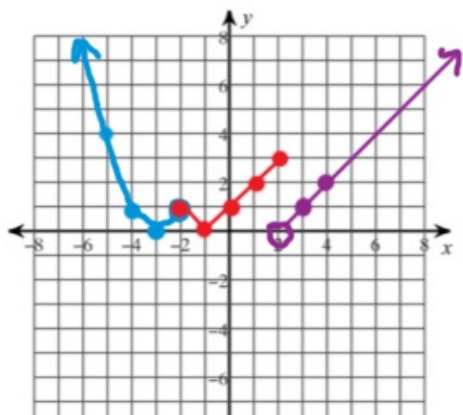
$$7) g(x) = \begin{cases} (x+3)^2, & x < -3 \\ 4, & -3 \leq x < 1 \\ -x-1, & x \geq 1 \end{cases}$$



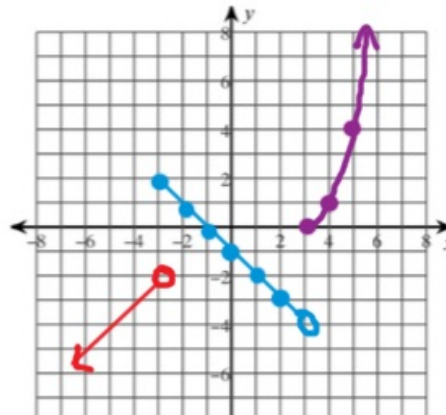
$$8) f(x) = \begin{cases} -2, & x \leq -4 \\ \sqrt{x+4}, & -4 < x < 0 \\ (x-1)^3, & x \geq 0 \end{cases}$$



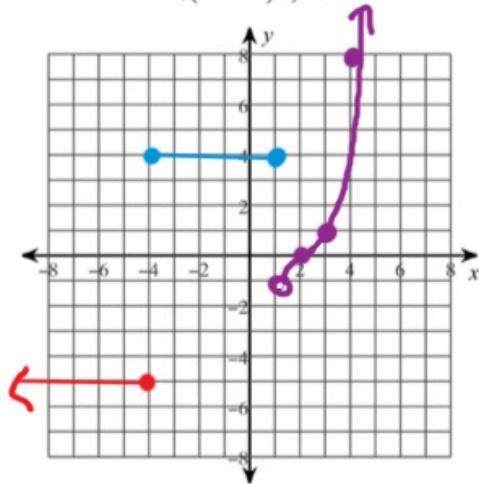
$$9) g(x) = \begin{cases} (x+3)^2, & x \leq -2 \\ |x+1|, & -2 < x \leq 2 \\ |x-2|, & x > 2 \end{cases}$$



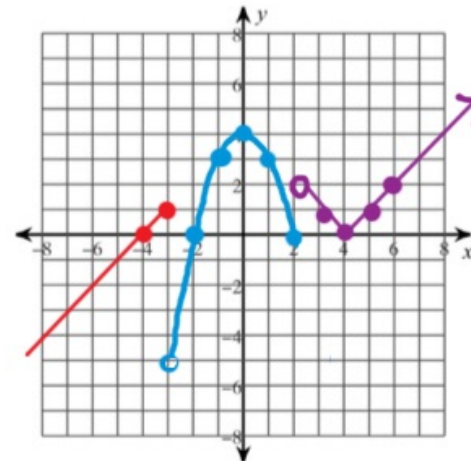
$$10) f(x) = \begin{cases} x+1, & x < -3 \\ -x-1, & -3 \leq x < 3 \\ (x-3)^2, & x \geq 3 \end{cases}$$



$$11) f(x) = \begin{cases} -5, & x \leq -4 \\ 4, & -4 < x \leq 1 \\ (x-2)^3, & x > 1 \end{cases}$$



$$12) g(x) = \begin{cases} x+4, & x \leq -3 \\ 4-x^2, & -3 < x \leq 2 \\ |x-4|, & x > 2 \end{cases}$$



-2-

