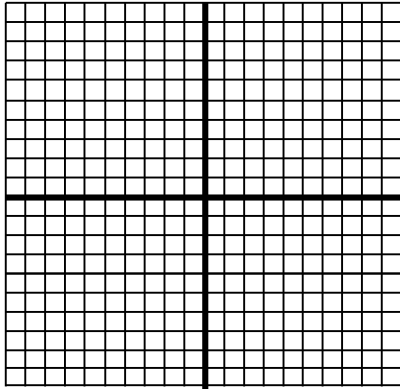
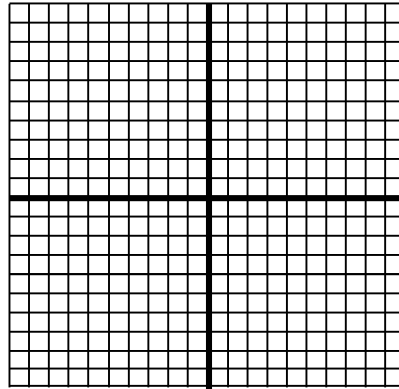


Graph each piecewise function.

$$1. f(x) = \begin{cases} \frac{2}{3}x - 1 & \text{if } -4 \leq x < 0 \\ 3 & \text{if } 0 \leq x < 1 \end{cases}$$

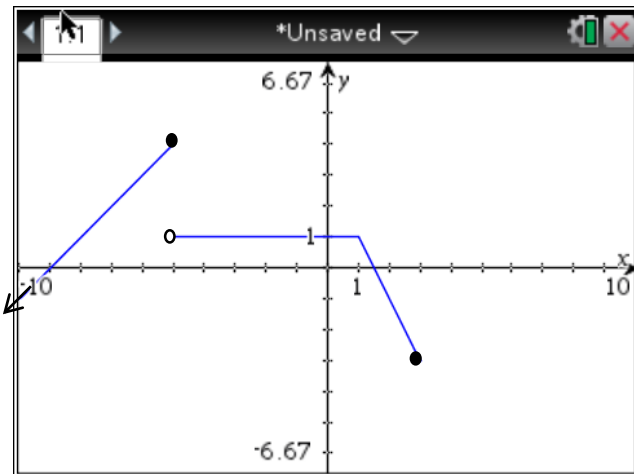


$$2. f(x) = \begin{cases} 3 & \text{if } -6 \leq x < -2 \\ 2x - 1 & \text{if } -2 \leq x < 0 \\ x & \text{if } 0 \leq x \end{cases}$$

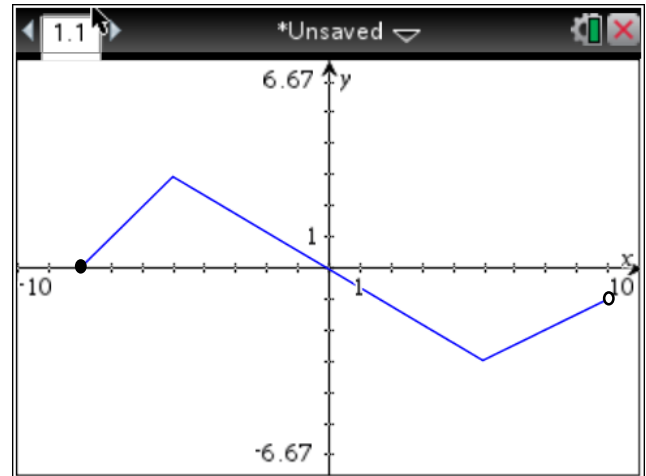


Write the function from each piecewise graph.

3.

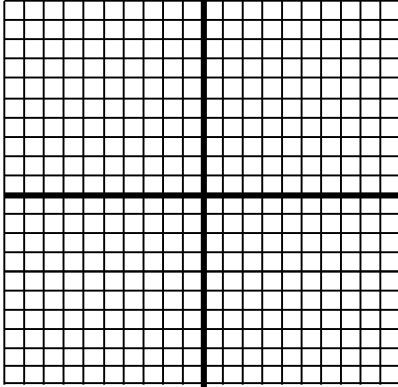


4.

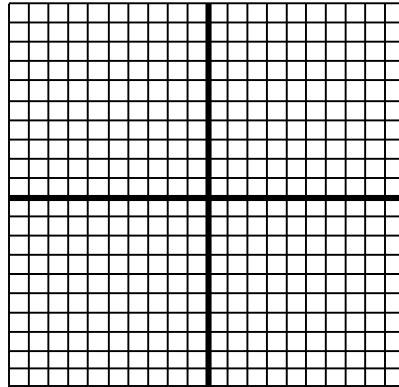


Graph each absolute value function.

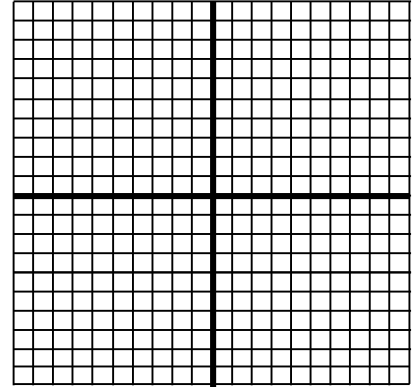
5.  $f(x) = |x + 2|$



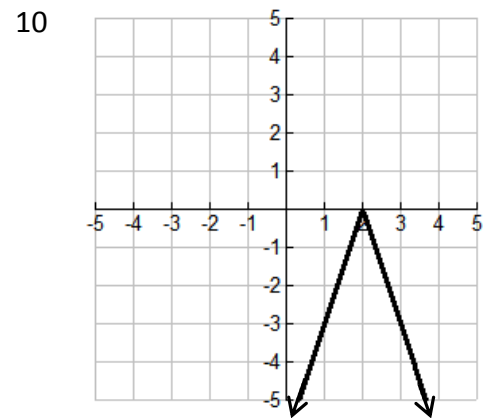
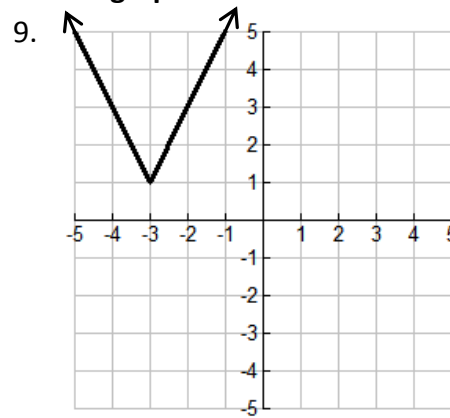
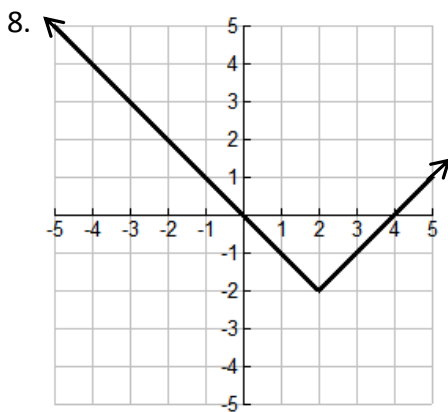
6.  $f(x) = -2|x|$



7.  $f(x) = 3|x + 1| - 2$



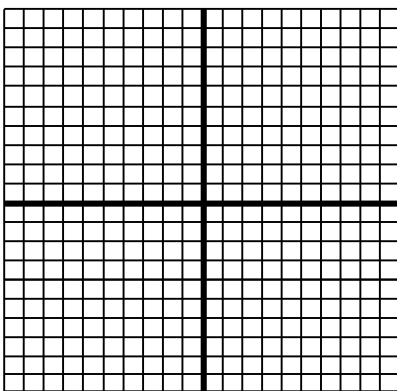
Write the absolute value function from the graph.



Graph each step function.

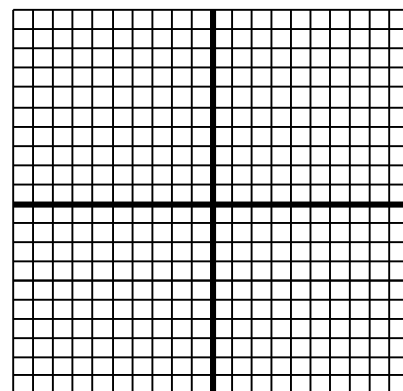
11.

$$f(x) = \begin{cases} 2 & \text{if } 0 \leq x < 2 \\ 5 & \text{if } 2 \leq x < 4 \\ 8 & \text{if } 4 \leq x < 6 \\ 11 & \text{if } 6 \leq x < 8 \end{cases}$$

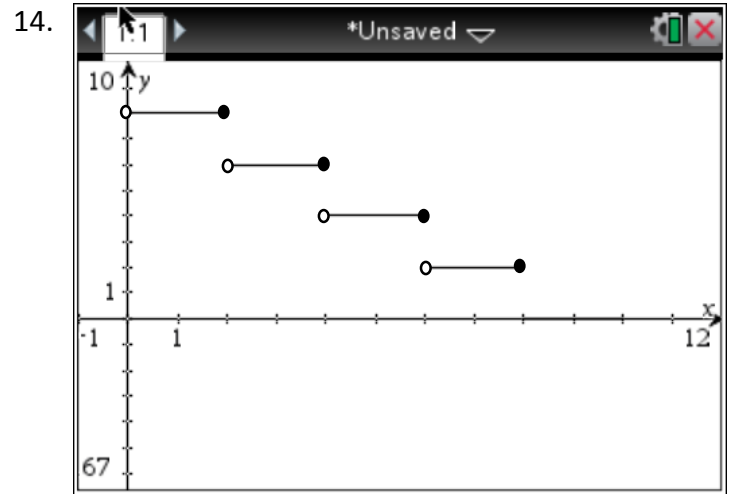
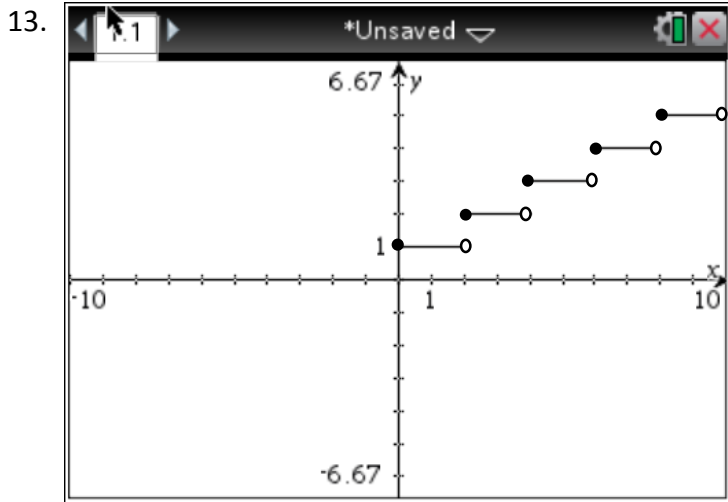


12.

$$f(x) = \begin{cases} 12 & \text{if } 0 < x \leq 1 \\ 10 & \text{if } 1 < x \leq 2 \\ 8 & \text{if } 2 < x \leq 3 \\ 6 & \text{if } 3 < x \leq 4 \end{cases}$$



Write the step function from the graph.



Evaluate.

15.  $\lfloor 5 \rfloor$

16.  $\lceil 2.8 \rceil$

17.  $\lceil -0.74 \rceil$

18.  $\lfloor -5.9 \rfloor$

Simplify

19.  $4jk^{-2} \bullet 3j^{-5}k^4$

20.  $(3ab^2)^3$

21.  $\frac{r^5}{r^{-2}}$

Evaluate.

22.  $\sqrt{27}$

23.  $\sqrt[3]{-8}$

24.  $\sqrt[4]{243v^6}$

Simplify. Leave answers with rational exponents and use only positive exponents.

25.  $w^{\frac{-2}{5}} \bullet w^{\frac{3}{2}}$

26.  $(j^{-10})^{\frac{1}{4}}$

27.  $\frac{k^{\frac{2}{7}}}{\frac{1}{k^7}}$