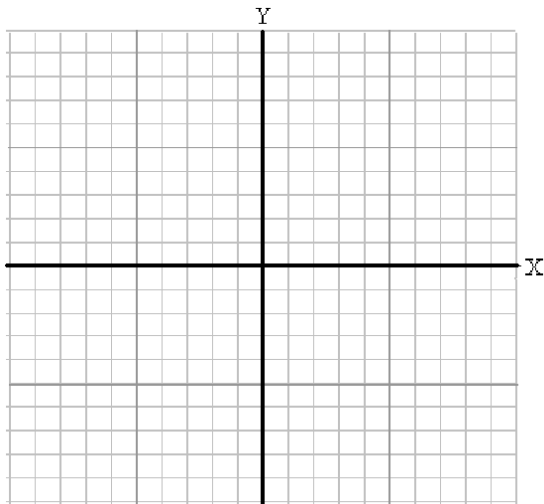


Use this relation for #1-3: $(4, 6), (8, -7), (2, 12), (3, -7), (-1, -4)$

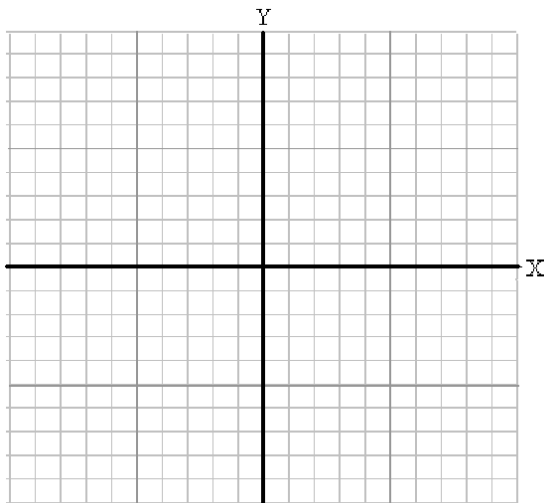
1. What is the domain?
2. What is the range?

****TIP** – Do not repeat numbers when listing members of the domain (or range). You should also arrange the numbers from least to greatest.

3. Is this relation a function?
4. Draw a relation (using lines or points) on this graph that IS a function.

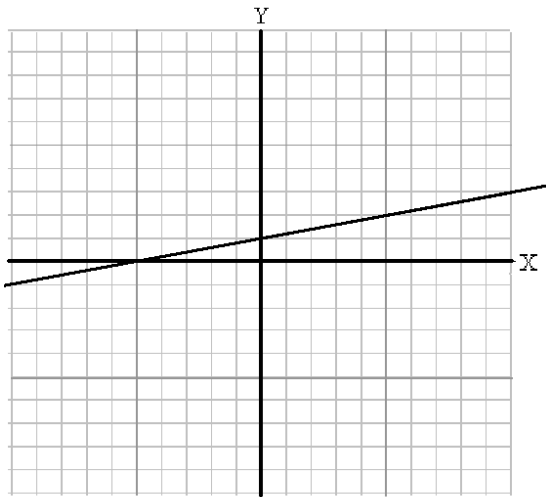


5. Draw a relation (using lines or points) on this graph that is NOT a function.



6. Find $f(7)$ if $f(x) = |-3x + 6|$.
7. Find $f(21)$ if $f(x) = -\frac{4}{7}x + 11$.

8. Find the slope of the line on this graph.



9. Find the slope of a line through the points $(-8, -3)$, & $(-5, 18)$.
10. Line 1 goes through $(1, -3)$, & $(6, 12)$. Line 2 goes through $(-2, 1)$, & $(-5, -8)$. Describe the relationship between Line 1 & Line 2 as **parallel**, **perpendicular**, or **neither**.
11. Write an equation in standard form $(Ax + By = C)$ for a line with a slope of $\frac{2}{3}$ that goes through the point $(5, 6)$.
12. Write an equation in standard form $(Ax + By = C)$ for a line that contains the points $(5, 7)$ & $(-3, 3)$.
13. Write an equation in standard form $(Ax + By = C)$ for a line that contains the point $(2, 7)$ and is perpendicular to the line $y = -\frac{1}{6}x + 8$.

Use this for #14-15:
$$f(x) = \begin{cases} \frac{1}{2}x + 3, & \text{if } x \leq 8 \\ 4x + 11, & \text{if } x > 8 \end{cases}$$

14. Find $f(-2)$.

15. Find $f(12)$.

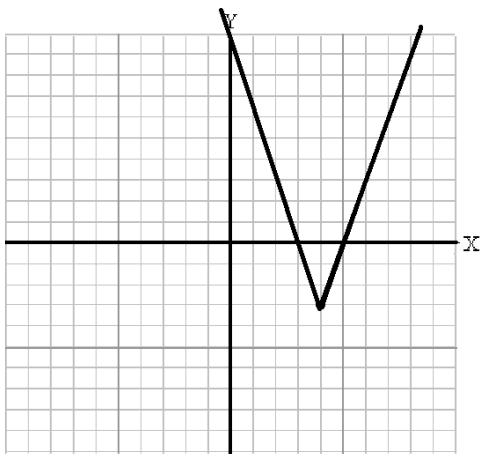
Use this absolute value function for #16-18: $y = -\frac{5}{6}|x + 8| + 9$

16. What point is the vertex?
17. Will the graph open UP or DOWN?
18. Will the graph be WIDER, NARROWER, or the SAME width as $y = |x|$?

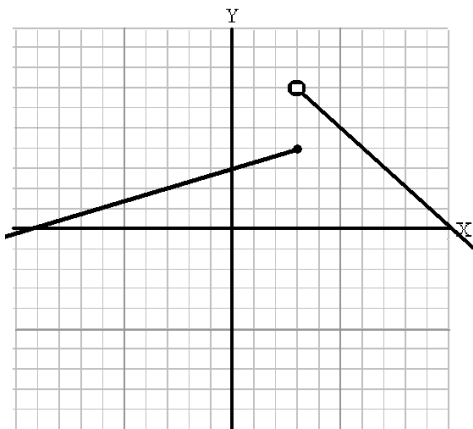
Use this absolute value function for #19-21: $y = -2|x - 4| - 1$

19. What point is the vertex?
20. Will the graph open UP or DOWN?
21. Will the graph be WIDER, NARROWER, or the SAME width as $y = |x|$?

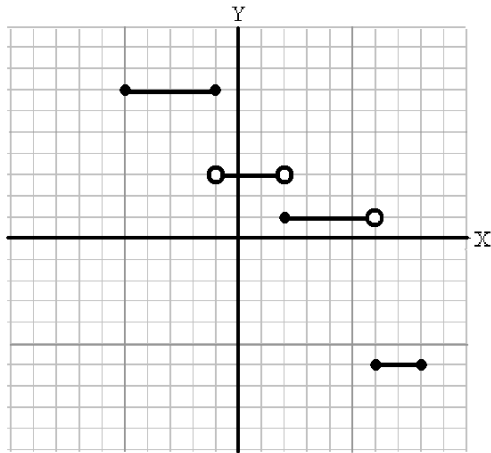
22. Write an equation for the function shown in the graph (you can tell it's an absolute value function because it is shaped like a symmetric "V").



23. Write an equation for the piecewise function shown in the graph.

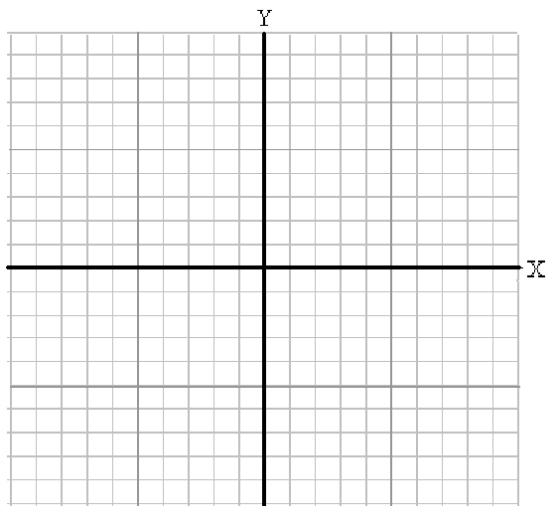


24. Write an equation for the step function shown in the graph.

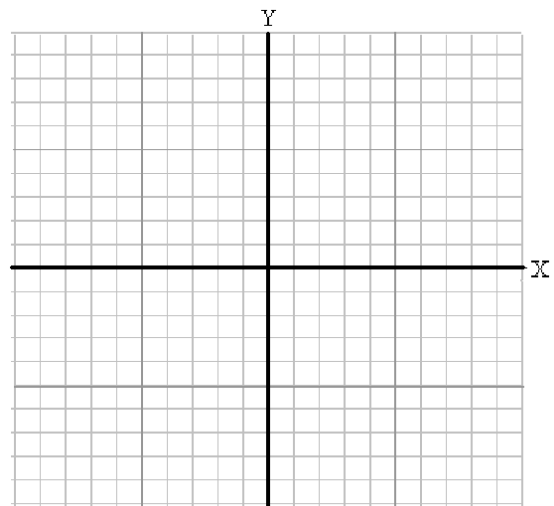


**TIP- You must use a straightedge (like a ruler) on the test, so you should use one here, too. Look out for solid or dashed lines when graphing inequalities.

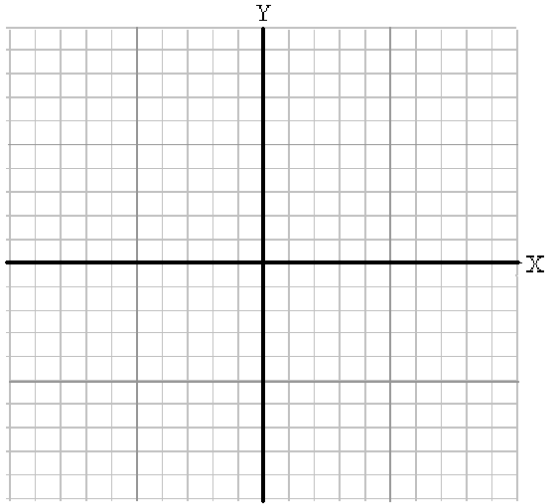
25. Graph the equation $5x + 4y = 40$.



26. Graph the inequality $y \geq 3x - 5$.



27. Graph the piecewise function $f(x) = \begin{cases} 2x + 1, & \text{if } x < -3 \\ \frac{1}{3}x + 4, & \text{if } x \geq -3 \end{cases}$.



28. Graph the absolute value function $y = -3|x + 1| + 6$.

