

guided notes

NAME _____

DATE _____

Module 9 Using Functions
Lesson 4 Graphing Functions

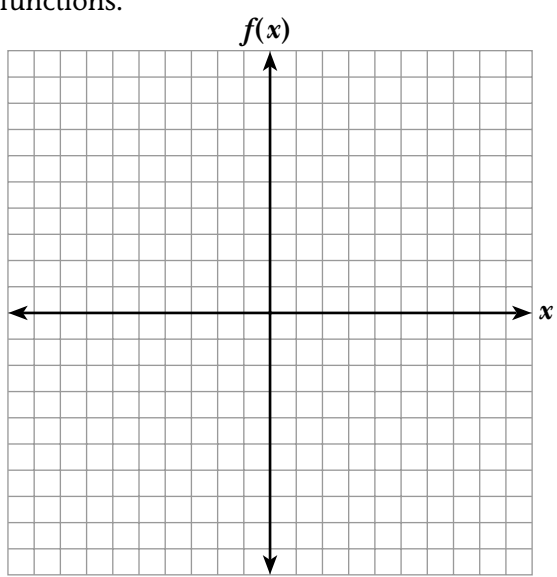
Lesson Objectives

- Graph linear functions from slope-intercept form.
- Graph constant functions.
- Graph absolute value functions.
- Graph piecewise functions.

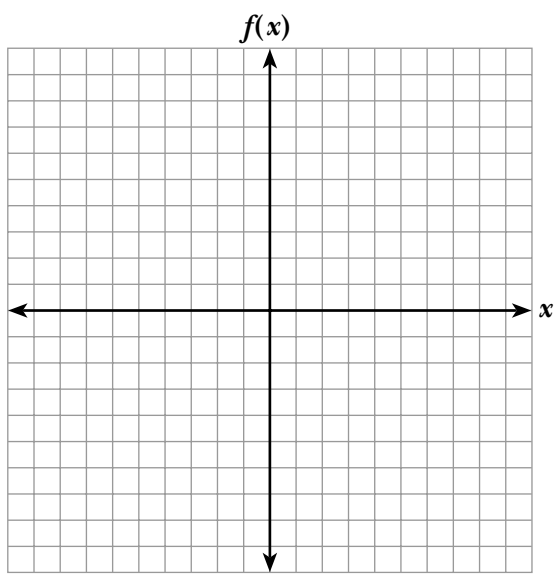
The _____ function is $f(x) = x$.

All _____ straight lines are linear functions.

1 Graph the linear function $f(x) = \frac{x}{3}$.
Then use the graph to evaluate $f(-6)$.



2 Graph the constant function $f(x) = -5$.
All horizontal lines are _____ functions.



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For any positive value a :

$f(x) = |x| + a$ translates the parent graph _____ a units.

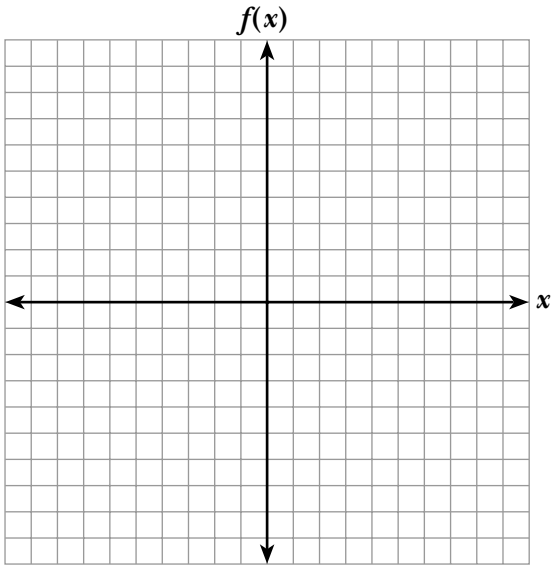
$f(x) = |x| - a$ translates the parent graph _____ a units.

For any positive value a :

$f(x) = |x + a|$ translates the parent graph _____ a units.

$f(x) = |x - a|$ translates the parent graph _____ a units.

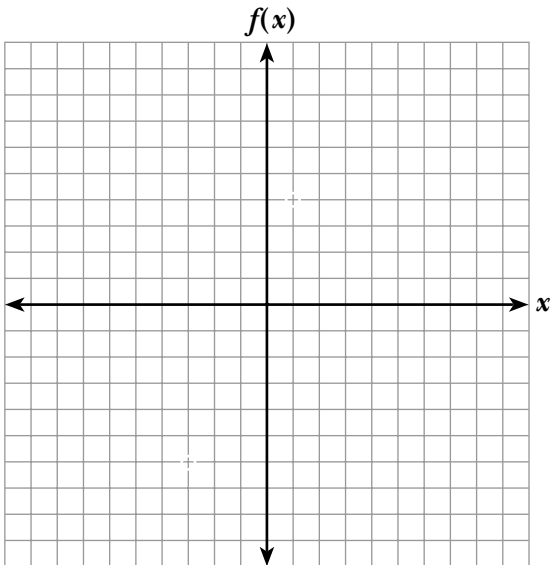
3 Graph the function $f(x) = |x - 3| - 6$.



A _____ function is a combination of functions whose graphs do not overlap.

4 Graph the following piecewise function:

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



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