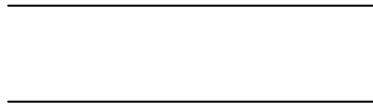


Are We Sure They Are Parallel?

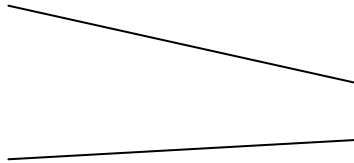
Geometric Definition of a Parallel Line: Lines that lie in the same plane and have no point in common.

Tell if the following lines are parallel or not and give your reasoning:

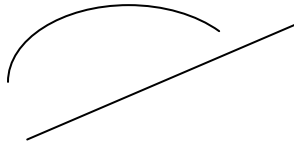
1.



2.



3.



Solution:

- 1. The lines are parallel. It fits the definition of the parallel line.**
- 2. The lines are NOT parallel. By extending the first and second line, you can tell the lines will eventually cross.**
- 3. The lines are NOT parallel. The curve on top has no consistent slope.**

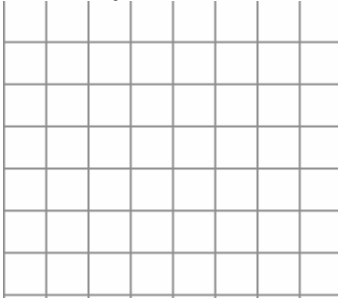
Algebraic Concept of Parallel Line: Parallel Lines contain the same slope, m.

Are the lines drawn from these equations parallel? Draw the lines of each equation on the grid.

1.

a. $x = 2y$

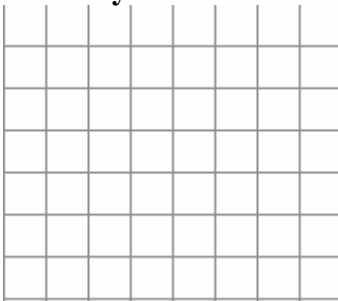
b. $4 + 2y = x$



2.

a. $4x + 2y = 1$

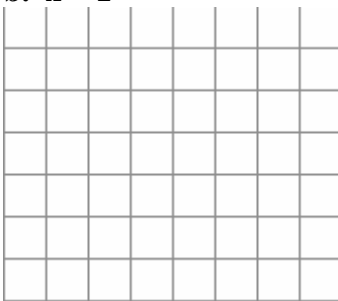
b. $x + 3y = 6$



3.

a. $x = 3$

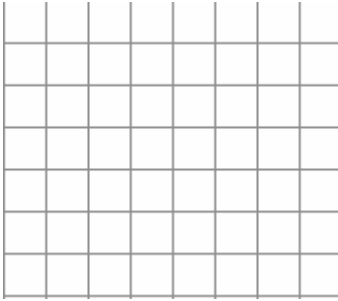
b. $x = 1$



4.

a. $y = 2$

b. $y = -4$



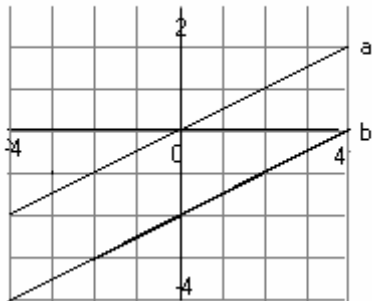
Solution:

1.

a. $x = 2y$ $m = 1/2$

b. $4 + 2y = x$ $m = 1/2$

Parallel

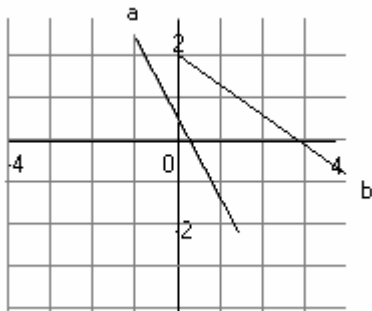


2.

a. $4x + 2y = 1$ $m = -2$

b. $x + 3y = 6$ $m = -1/3$

NOT parallel, differing slope



3.

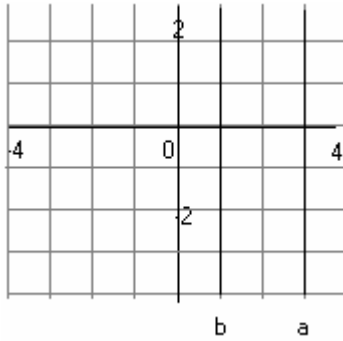
a. $x = 3$

$m = \text{undefined}$

Parallel

b. $x = 1$

$m = \text{undefined}$



4.

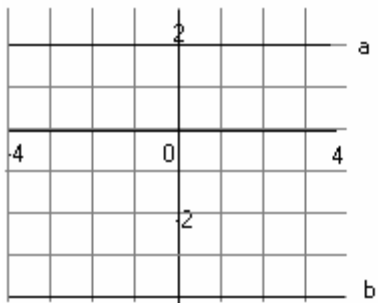
a. $y = 2$

$m = 0$

Parallel

b. $y = -4$

$m = 0$



Student Sheet #1.

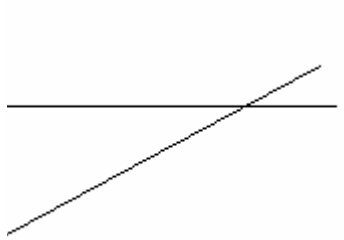
Geometric Definition of a Parallel Line: Lines that lie in the same plane and have no point in common.

Which of the following are parallel lines, assuming that they're on the same plane?

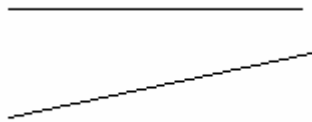
1.



2.



3.



4.

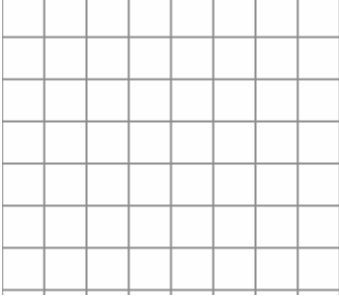


Student Activity Sheet #2

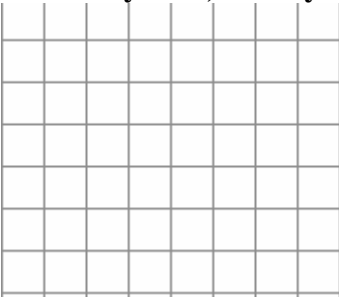
Algebraic Concept of Parallel Line: Parallel Lines contain the same slope, m.

Plot the following equation on graph below. Are the lines parallel?

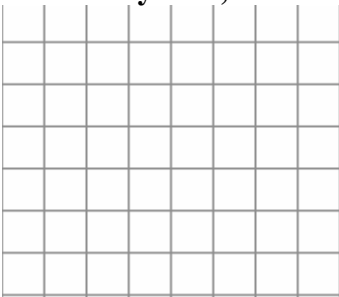
1. $x=1, x=3$



2. $3x + 4y = 12, 6x + 8y = 25$



3. $-6x - 8y = 14, -7x + 11y = -7$



4. $y = 0, y = 7$

