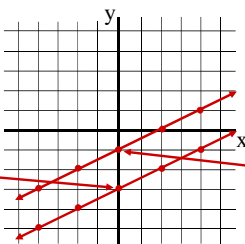


Lesson 8-5b

Objective - To recognize parallel and perpendicular lines in coordinate geometry.

Graph the following on the coordinate plane.

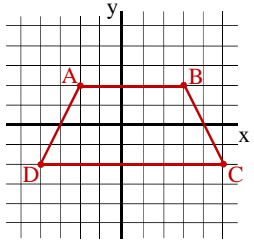
$y = \frac{1}{2}x - 3$  $y = \frac{1}{2}x - 1$

$m = \frac{1}{2}$ $m = \frac{1}{2}$
 $b = -3$ $b = -1$

Parallel lines have the same slope.

Graph the ordered pairs below and give all possible names of the figure formed.

A(-2, 2) C(5, -2)
 B(3, 2) D(-4, -2)



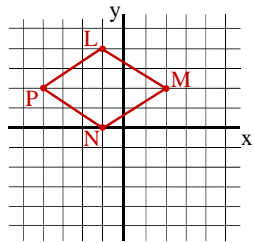
Quadrilateral
 Trapezoid

Name a pair of parallel lines.

$\overline{AB} \parallel \overline{CD}$

Find the coordinates of the missing vertex for rhombus LMNP if L(-1,4), M(2,2), and N(-1,0).

Point P = (-4, 2)

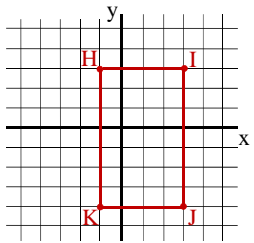


Name two pairs of parallel lines.

$\overline{LP} \parallel \overline{MN}$ $\overline{PN} \parallel \overline{LM}$

Find the coordinates of the missing vertex for rectangle HIJK if H(-1,3), I(3,3), and J(3,-4).

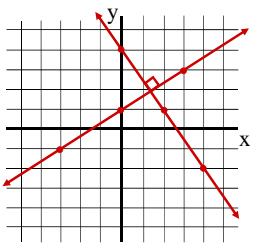
Point K = (-1, -4)



Name two pairs of perpendicular lines.

$\overline{HK} \perp \overline{HI}$ $\overline{IJ} \perp \overline{JK}$

Graph the following on the coordinate plane.

$y = \frac{2}{3}x + 1$  $y = -\frac{3}{2}x + 4$

$m = \frac{2}{3}$ $m = -\frac{3}{2}$
 $b = 1$ $b = 4$

Lines appear perpendicular

Perpendicular lines have slopes that are opposite reciprocals

Find the following:

Number	Opposite	Reciprocal	Opposite Reciprocal
$\frac{2}{3}$	$-\frac{2}{3}$	$\frac{3}{2}$	$-\frac{3}{2}$
$-\frac{4}{5}$	$\frac{4}{5}$	$-\frac{5}{4}$	$\frac{5}{4}$
$3 = \frac{3}{1}$	-3	$\frac{1}{3}$	$-\frac{1}{3}$
$0.2 = \frac{1}{5}$	-0.2	$\frac{5}{1} = 5$	-5
-8	8	$-\frac{1}{8}$	$\frac{1}{8}$

Lesson 8-5b (cont.)

Determine whether the slopes are perpendicular.

1) $m = \frac{2}{3}$ $m = \frac{-3}{2}$ $\frac{2}{3} \cdot \frac{-3}{2} = \frac{-6}{6} = -1$

Yes, perpendicular.

2) $m = -\frac{3}{5}$ $m = \frac{-5}{3}$ $-\frac{3}{5} \cdot \frac{-5}{3} = \frac{15}{15} = 1$

No, not perpendicular.

3) $m = -4$ $m = \frac{1}{4}$ $-4 \cdot \frac{1}{4} = -1$

Yes, perpendicular.

Draw a line through the given points and find its slope.

1) L(-2, -2) M(3, 1)

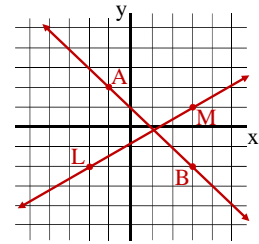
$m = \frac{3}{5}$

2) A(-1, 2) B(3, -2)

$m = -1$

3) Are the two lines parallel or perpendicular?

Neither



Draw a line through the given points and find its slope.

1) X(-3, -4) Y(5, 2)

$m = \frac{6}{8} = \frac{3}{4}$

2) C(-1, 2) D(2, -2)

$m = \frac{-4}{3}$

3) Are the two lines parallel or perpendicular?

Perpendicular

