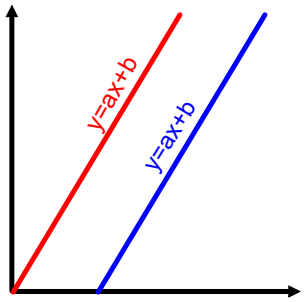
Parallel Lines



Remember!

In a line y=**a**x+**b:**

* **a** corresponds to the slope

* **b** corresponds to the y-intercept

Two lines are parallel if:

they have the same slope (a=a)

Examples:

1) a=5 and a=$\frac{10}{2}$ parallel

2) y=4x+2 and y=4x-1 parallel //

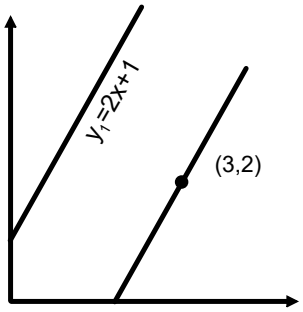
3) y=3x+1 and y=-3x+1 not parallel

4) y=3 and y=7 (0x+3 and 0x+7) parallel

5) y=2x+1 and y=2x+1 parallel

Find the equation of a line that is parallel to a line y_1, passing through a point (X,Y).

Ex. 1:



1) a? *Find the slope of y_1*

$a=2$

Same slope

2) b? *Replace x,y in the equation by (X,Y) and solve for b.*

$y=ax+b$

$y=2x+b$

$2=2(3)+b$

$2=6+b$

$2-6=b$

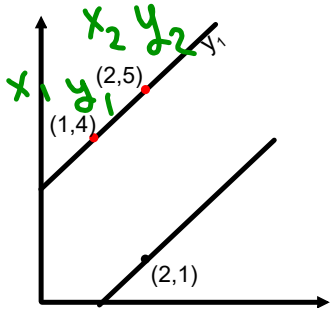
$b=-4$

3) Answer: *State the equation in the form y=ax+b*

$y=2x-4$

Find the equation of a line that is parallel to a line y_1, passing through a point (X,Y).

Ex. 2:



y_2=ax+b

1) a? *Find the slope of y_1*

$$a = \frac{y_2 - y_1}{x_2 - x_1} = \frac{5-4}{2-1} = \frac{1}{1} = 1$$

a=1
same slope

2) b? *Replace x,y in the equation by (X,Y) and solve for b.*

$y = 1x + b$

$1 = 2 + b$

$-2+1 = b$

$b = -1$

3) Answer: *State the equation in the form y=ax+b*

$y = x - 1$

Attachments

Clarinet.aup

Alto Xylophone B.mp3

Piano Low C.mp3