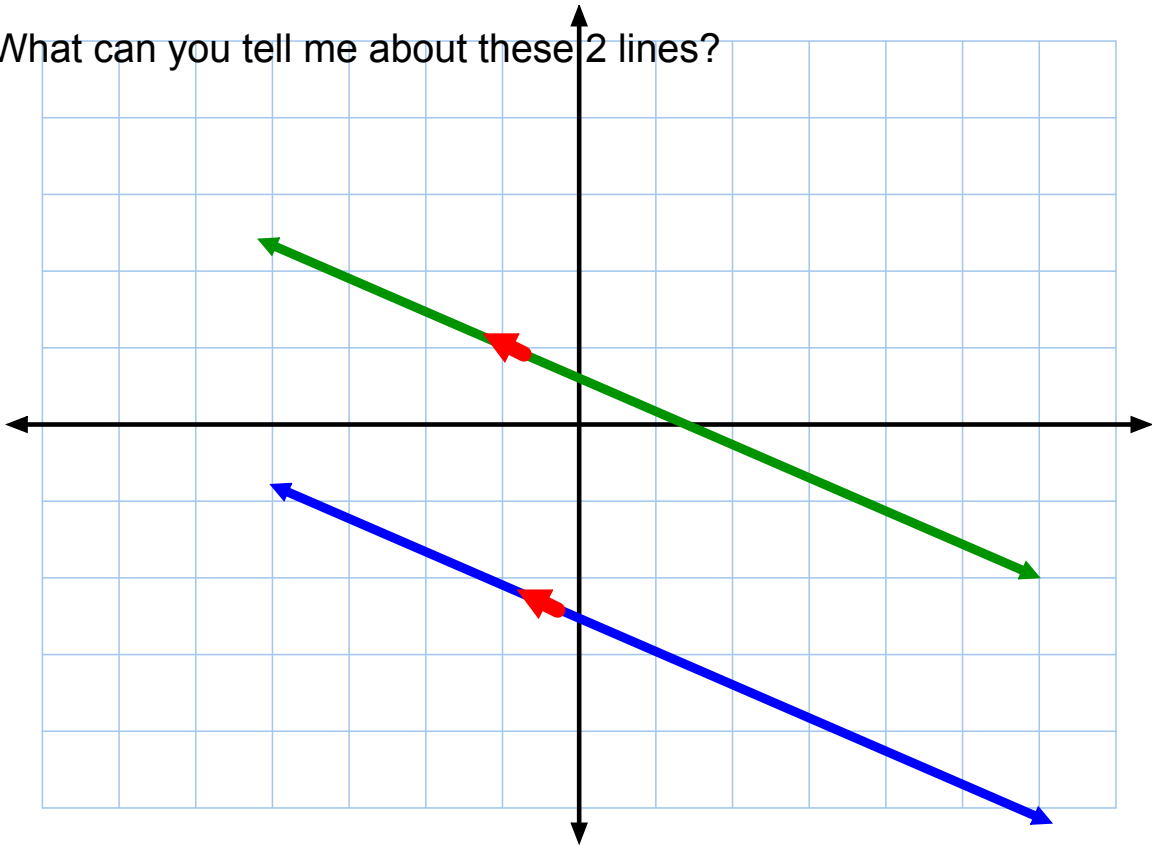
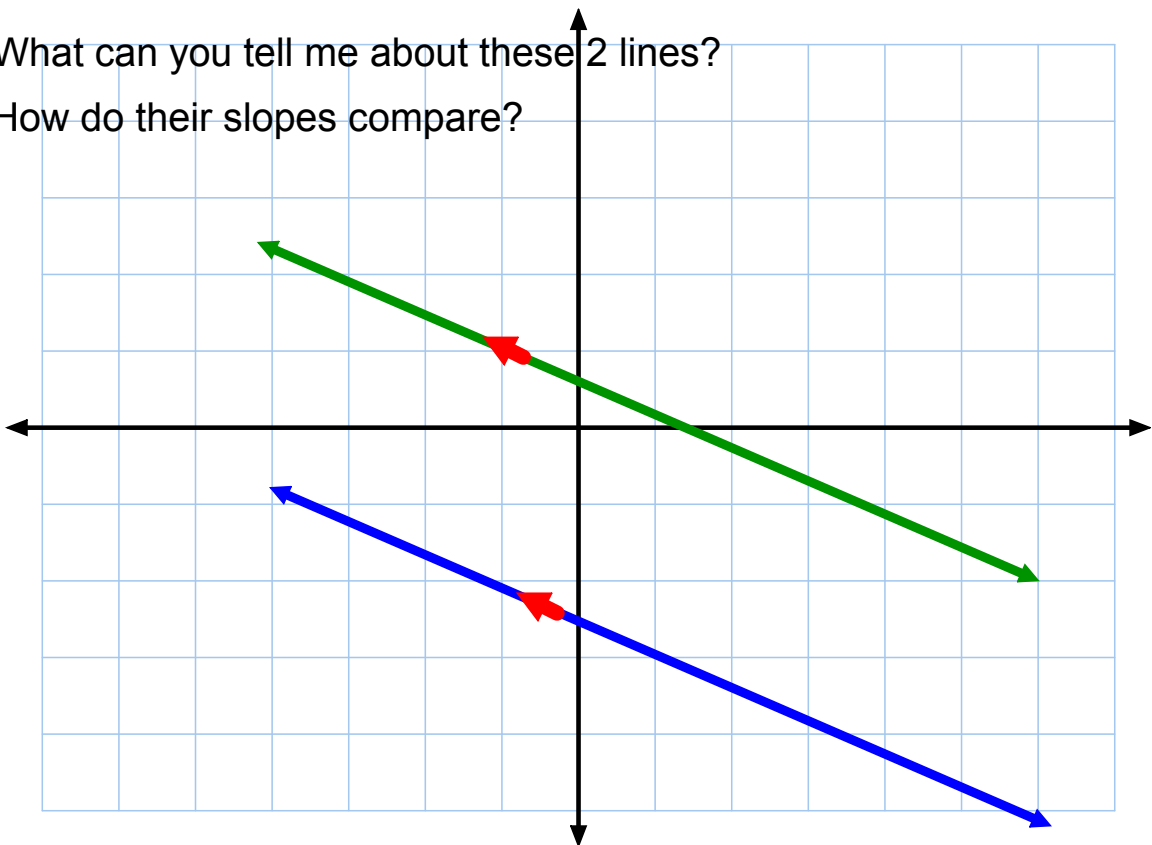


What can you tell me about these 2 lines?



What can you tell me about these 2 lines?

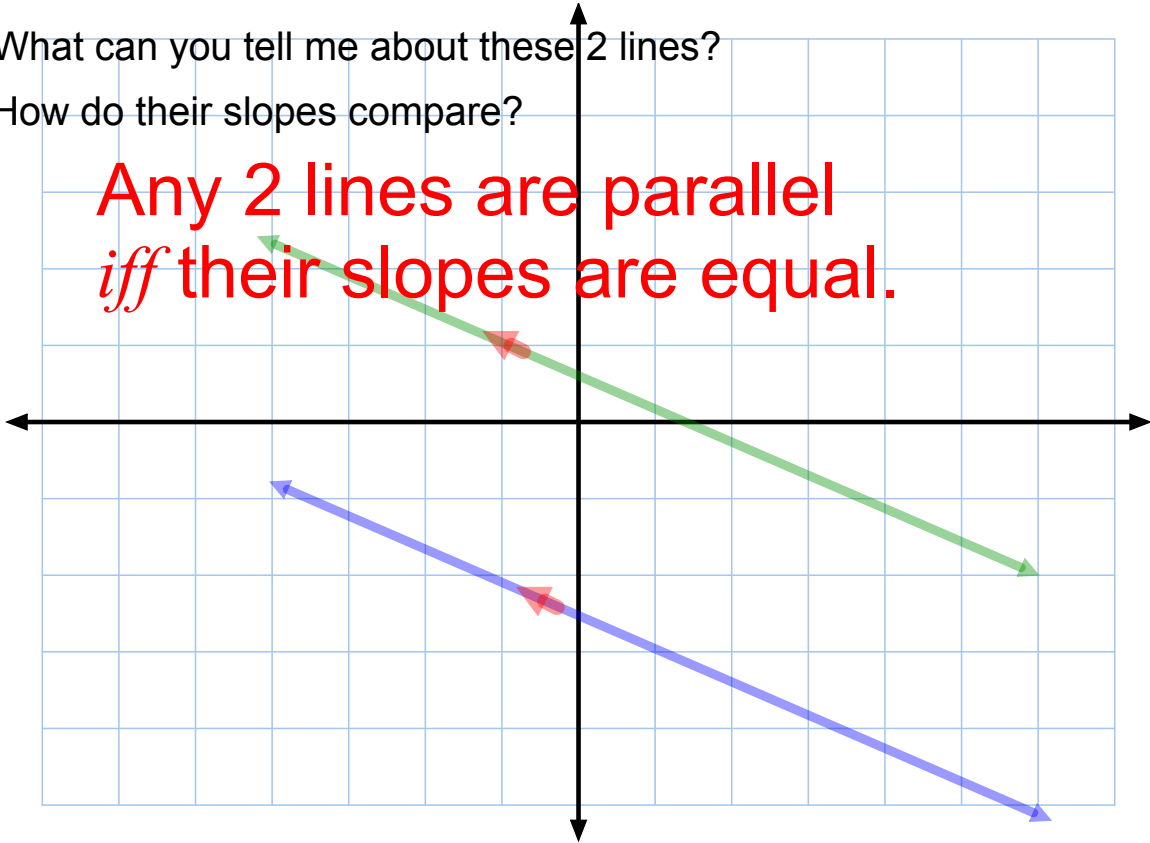
How do their slopes compare?



What can you tell me about these 2 lines?

How do their slopes compare?

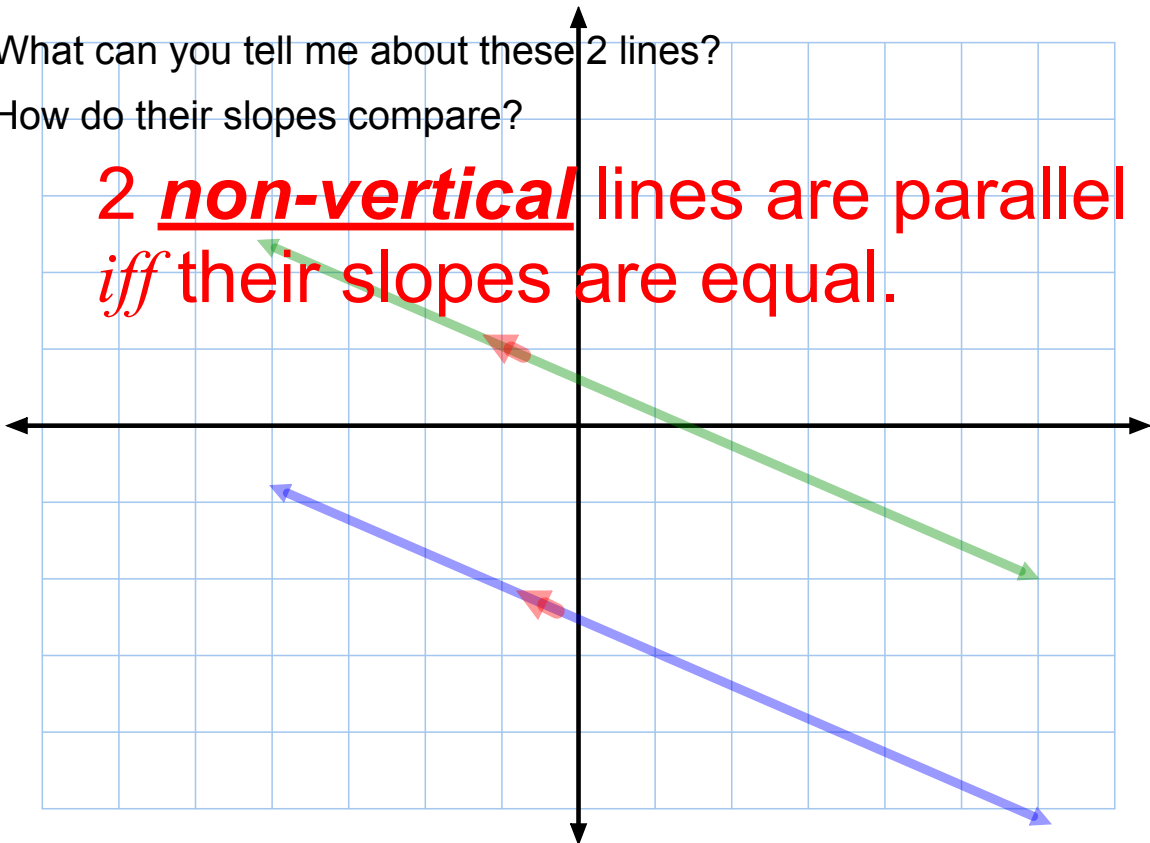
Any 2 lines are parallel  
*iff* their slopes are equal.



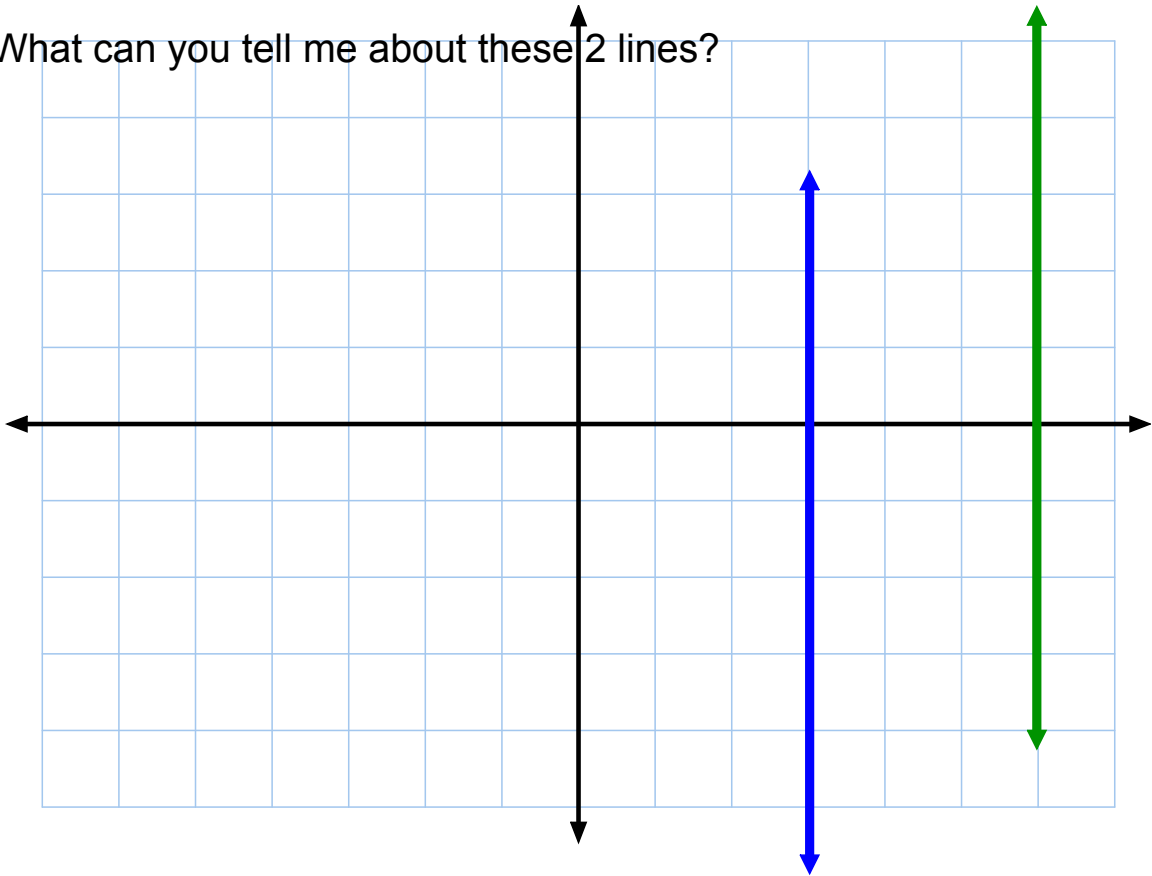
What can you tell me about these 2 lines?

How do their slopes compare?

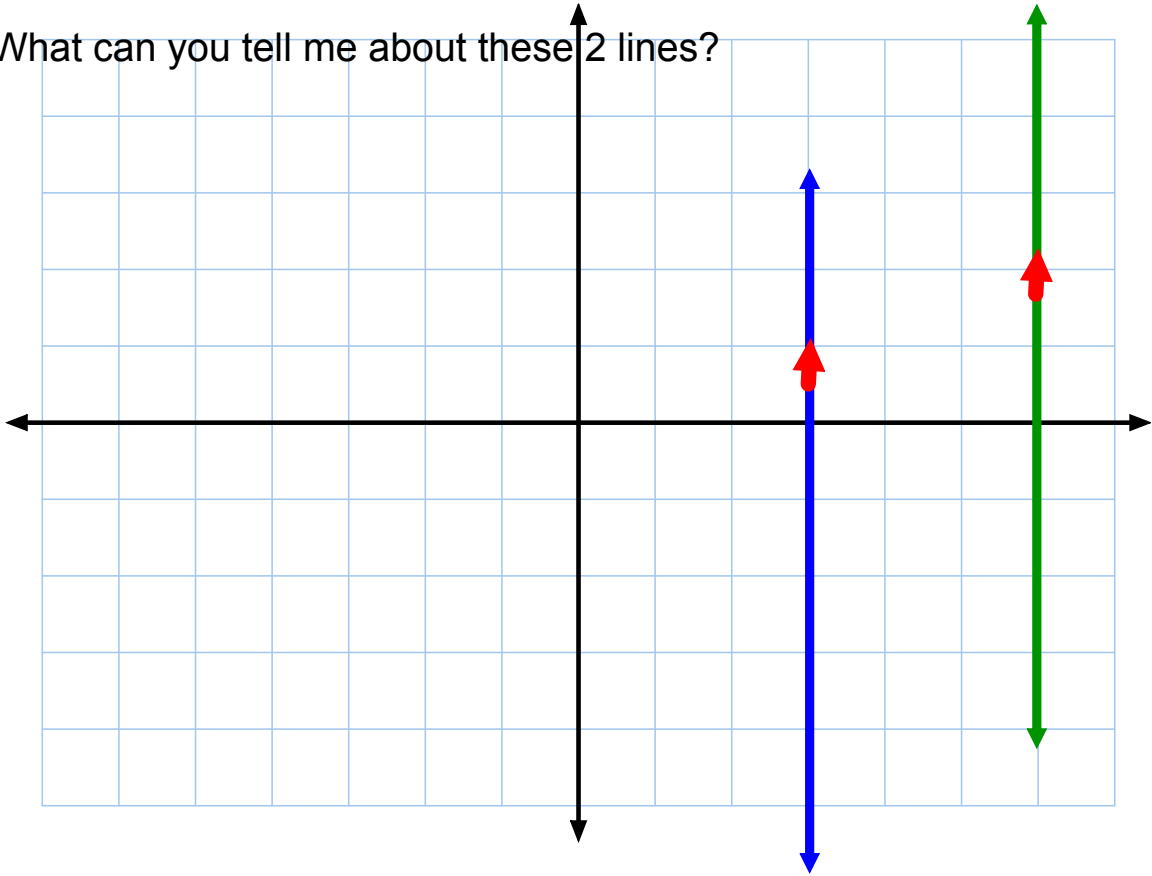
2 non-vertical lines are parallel  
*iff* their slopes are equal.



What can you tell me about these 2 lines?

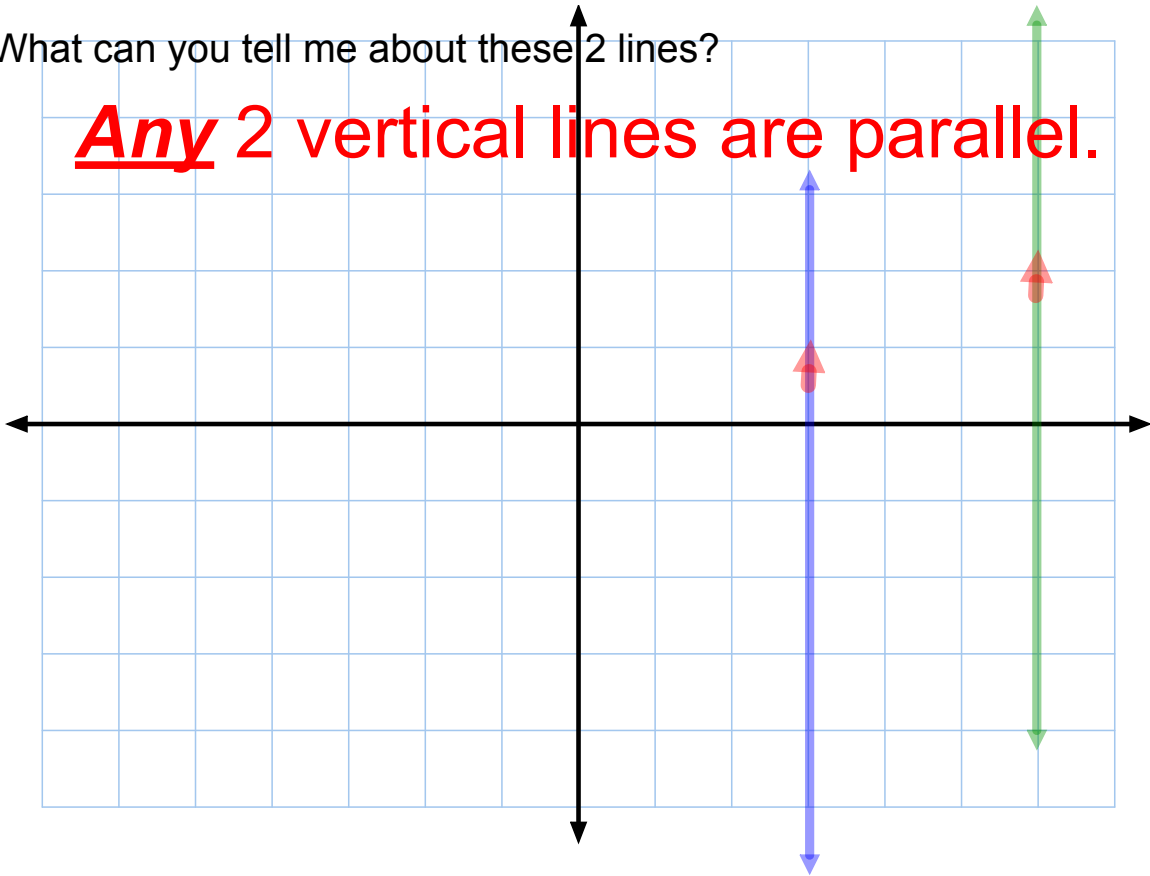


What can you tell me about these 2 lines?

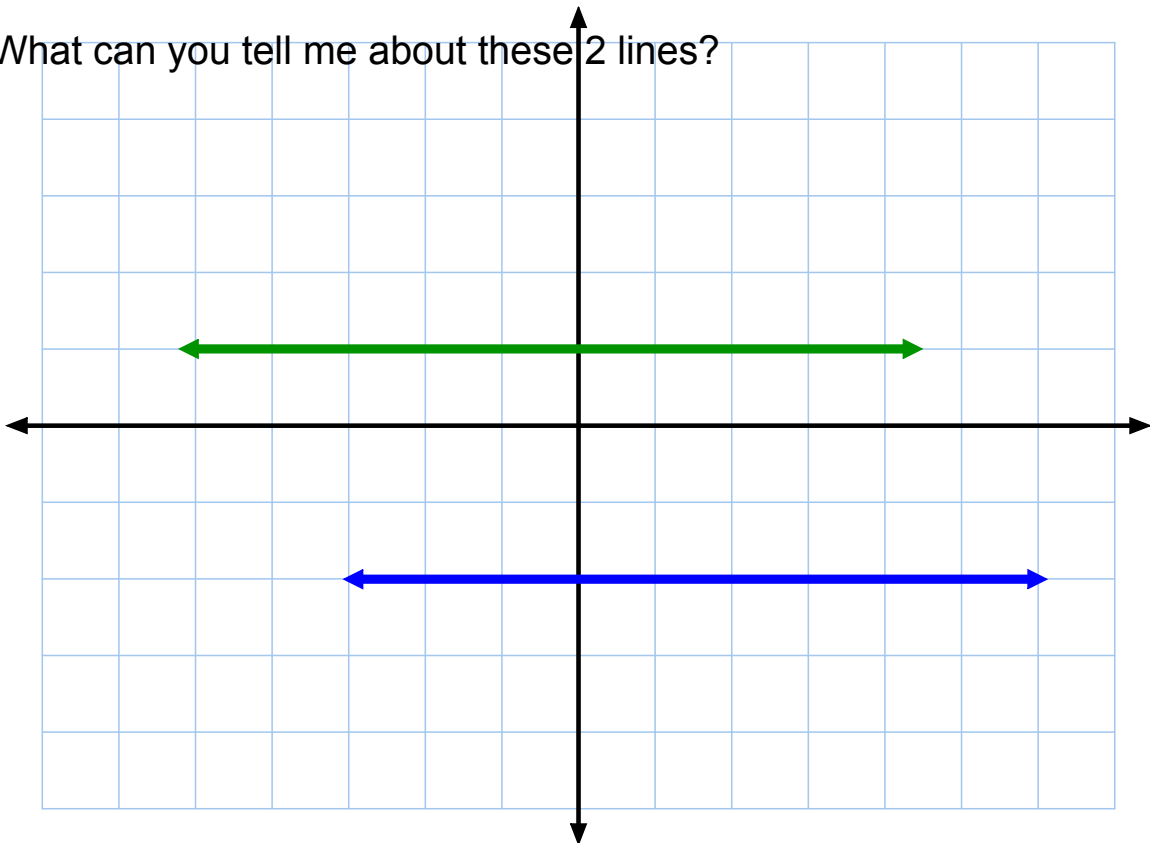


What can you tell me about these 2 lines?

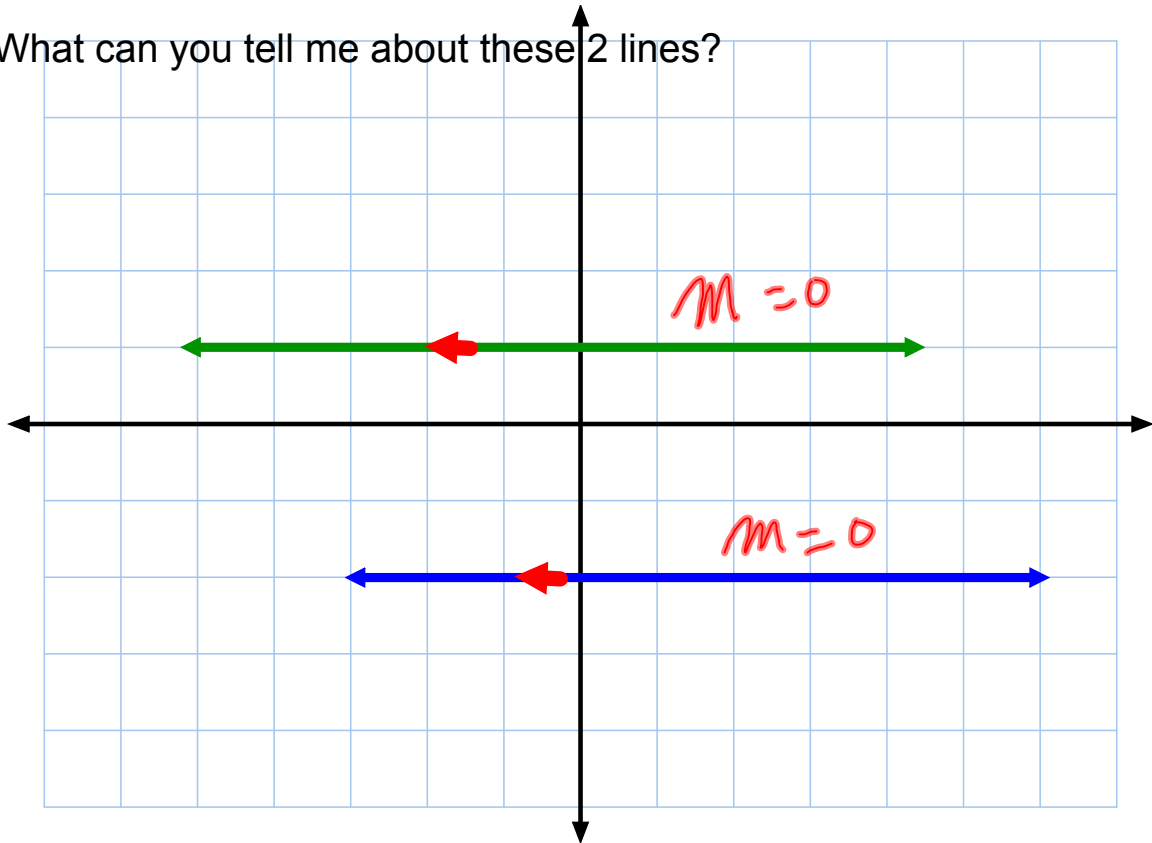
**Any 2 vertical lines are parallel.**



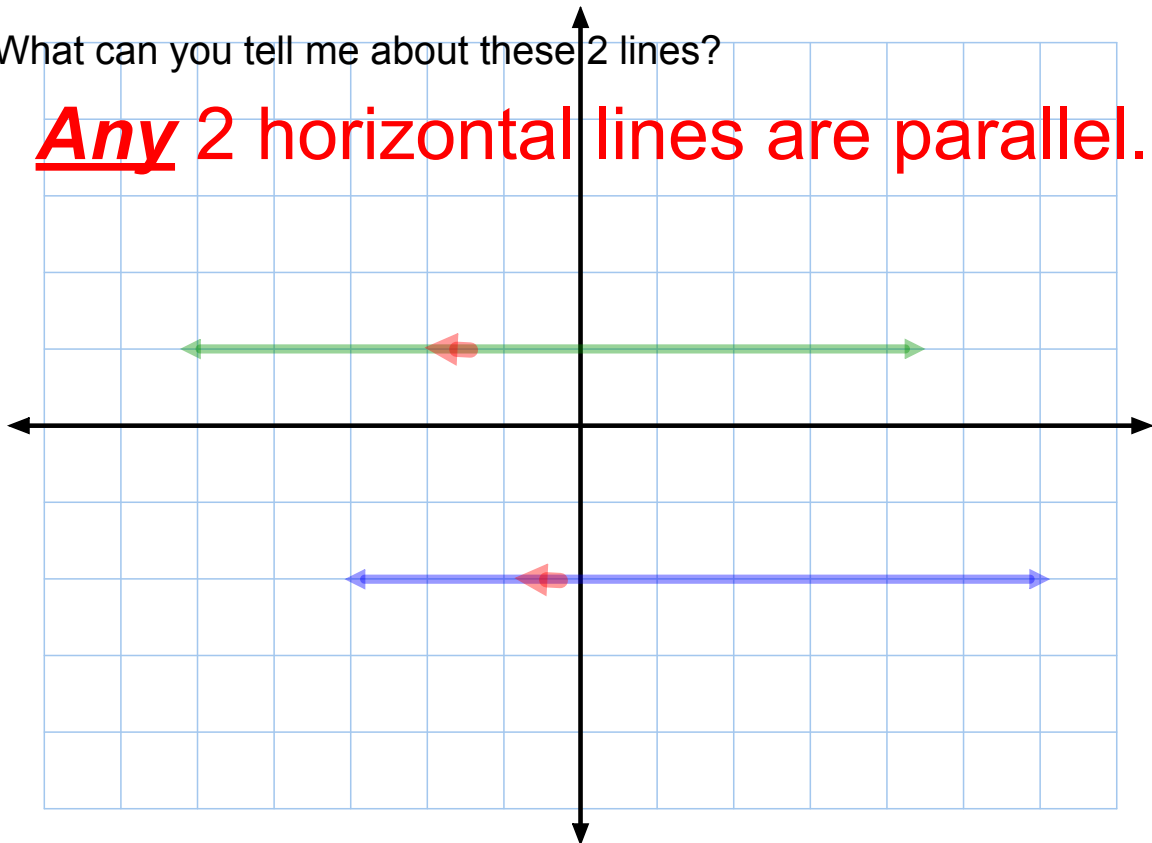
What can you tell me about these 2 lines?



What can you tell me about these 2 lines?



What can you tell me about these 2 lines?



Nope

$\frac{1}{3}$

$\frac{1}{2}$

**1 Are lines 1 & 2 parallel?**

**Line 1: (1, 3) & (-5, 1)**

**Line 2: (4, 2) & (-4, -2)**

Yes

No

2 What is the slope of line 1 from the prior page?

Line 1: (1, 3) & (-5, 1)



3 What is the slope of line 2 from the prior page?

Line 2:  $(x_1, y_1)$  &  $(x_2, y_2)$   
Line 2: (4, 2) & (-4, -2)

$$\frac{-2 - 2}{-4 - 4} = \frac{-4}{-8}$$

No                      Line 1                      Line 2

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

1 Are the lines parallel?

Std Form

Line 1:  $3x + 4y = 12$

$y = mx + b$

Line 2:  $6x + 2y = 6$

Yes

No

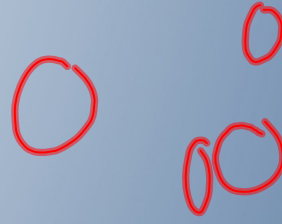
$$\begin{array}{r}
 3x + 4y = 12 \\
 -3x \qquad -3x \\
 \hline
 4y = -3x + 12 \\
 \frac{4y}{4} = \frac{-3x}{4} + \frac{12}{4} \\
 y = -\frac{3}{4}x + 3
 \end{array}$$

$$\begin{array}{r}
 \frac{6x}{2} + \frac{2y}{2} = \frac{6}{2} \\
 3x + y = 3 \\
 -3x \qquad -3x \\
 \hline
 y = -3x + 3
 \end{array}$$



**2 What is the slope of line one from the prior page?**

**Line 1:  $3x + 4y = 12$**



**3 What is the slope of line 2 from the prior page?**

**Line 2:  $6x + 2y = 6$**



1 Write an equation for a line parallel to line AB going through the point C(-2, 4).

- $y - y_1 = m(x - x_1)$   
 A  $y - 2 = 1/2(x + 4)$   
 B  $y - 2 = 1/2(x - 4)$   
 C  $y + 2 = 1/2(x + 4)$

- E  $y - 4 = 1/2(x + 2)$   
 F  $y - 4 = 1/2(x - 2)$

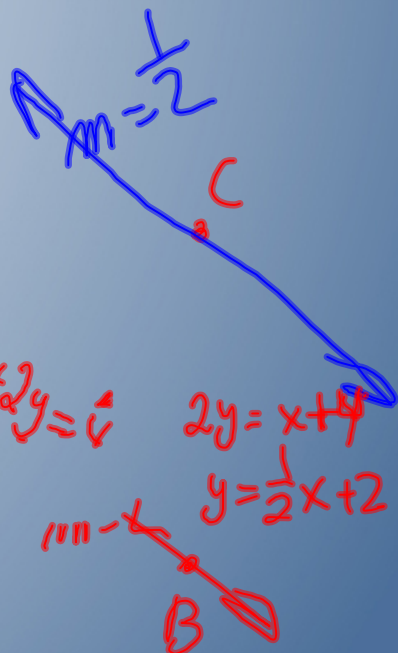
H  $y + 4 = 1/2(x - 2)$

D  $y + 2 = 1/2(x - 4)$

G  $y + 4 = 1/2(x + 2)$

Hey idiot use diff slopes!

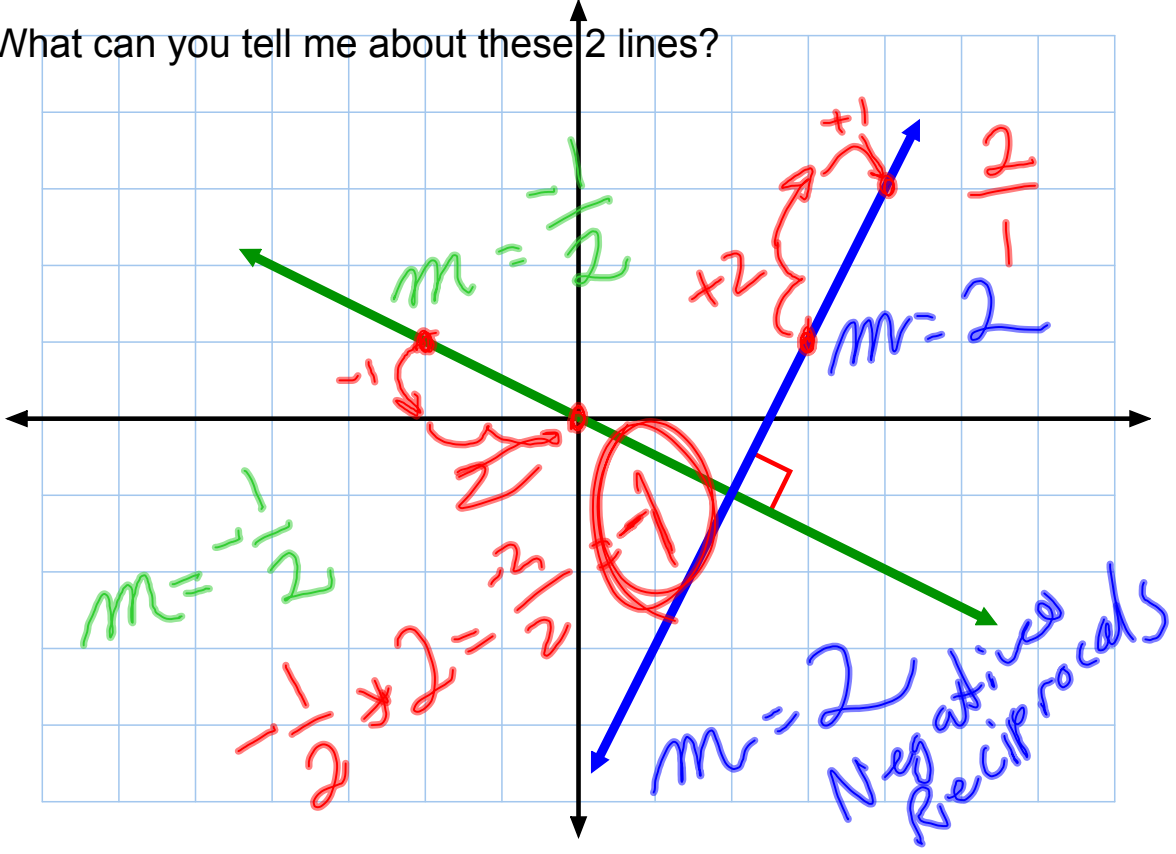
$-x + 2y = 4$



$$\begin{array}{r}
 -x + 2y = 4 \\
 \hline
 \frac{2y}{2} = \frac{x+4}{2} \\
 y = \left(\frac{1}{2}\right)x + 2
 \end{array}$$

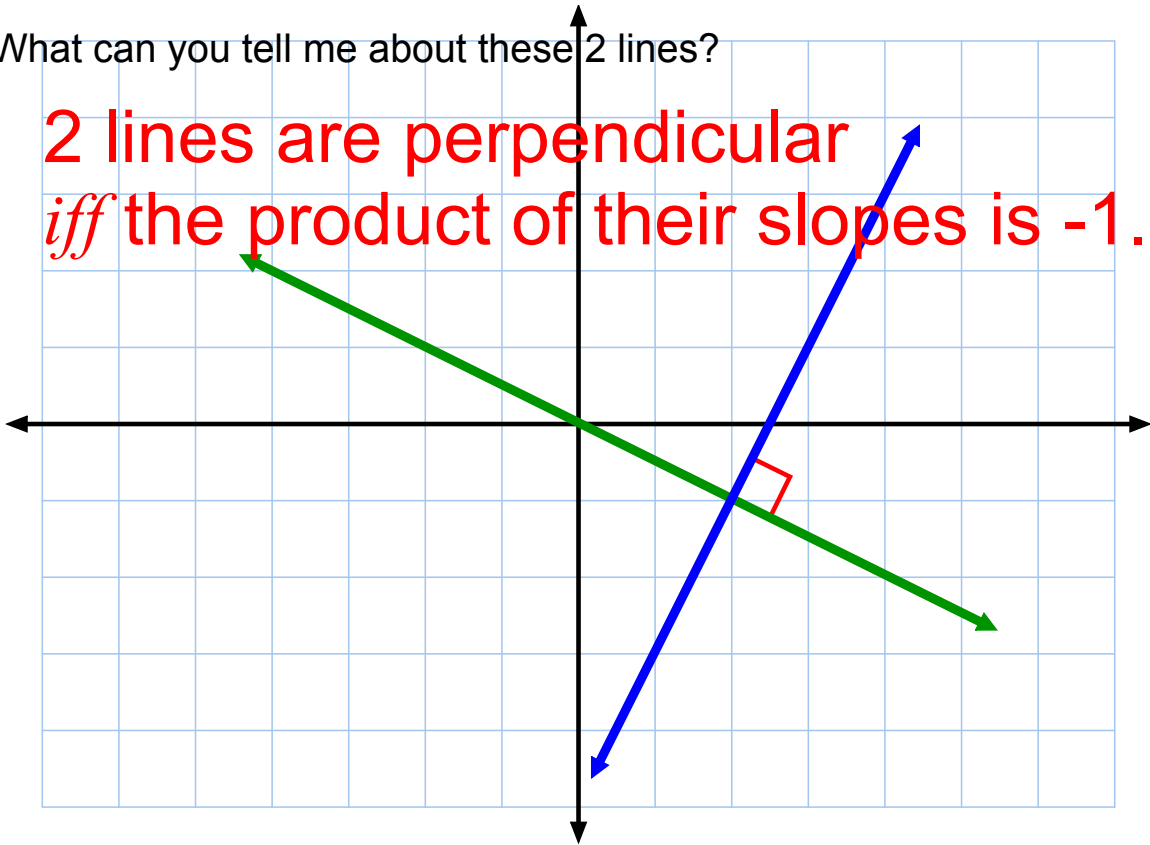
Std Form  
↓  
slope-interc.

What can you tell me about these 2 lines?

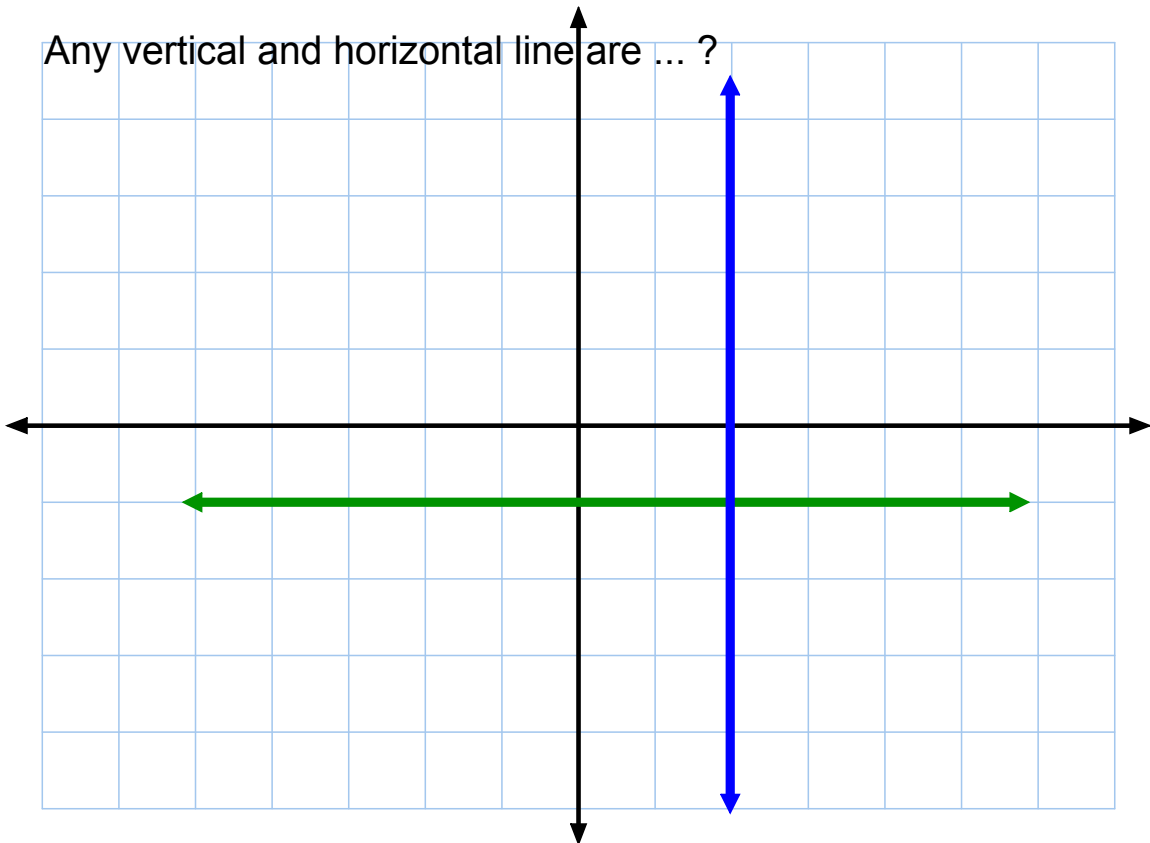


What can you tell me about these 2 lines?

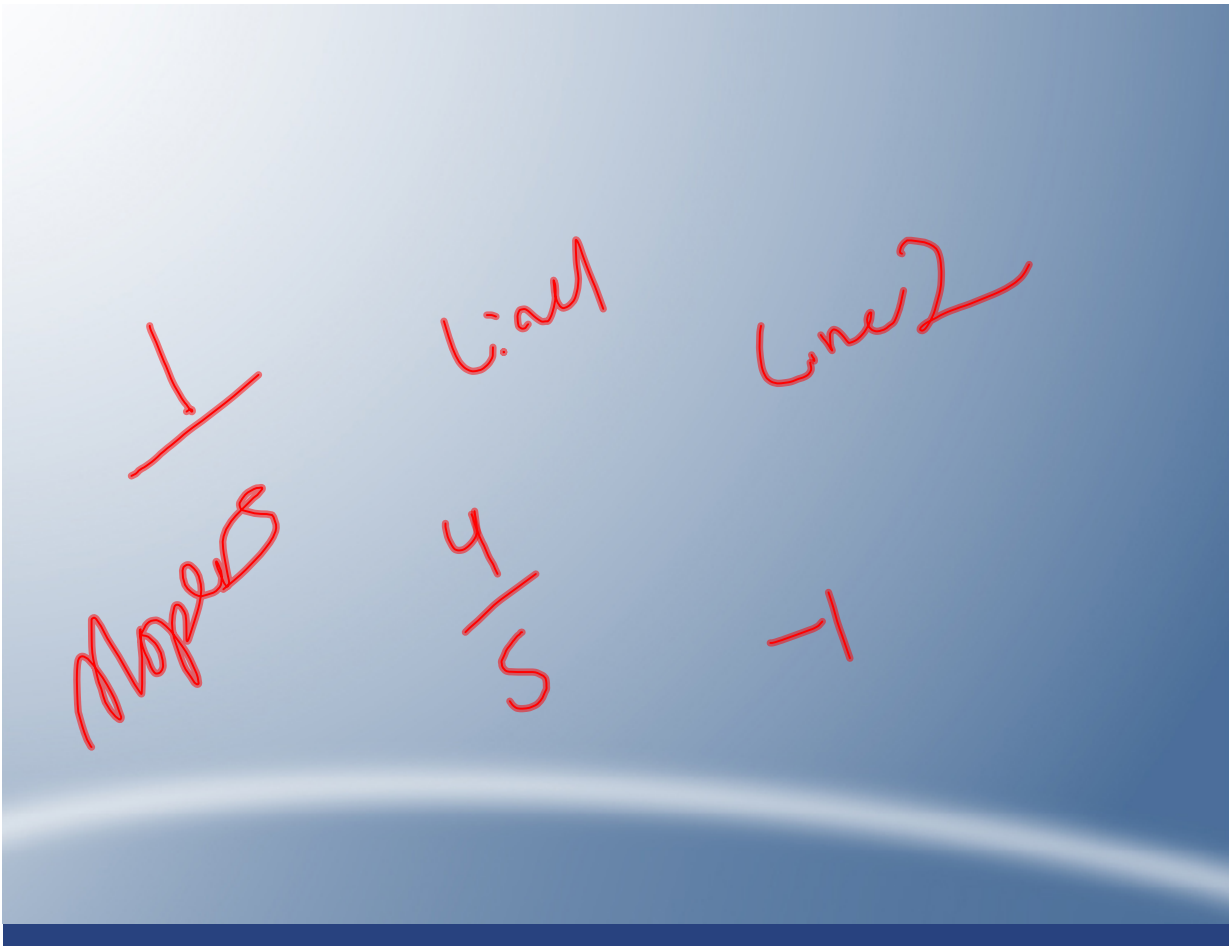
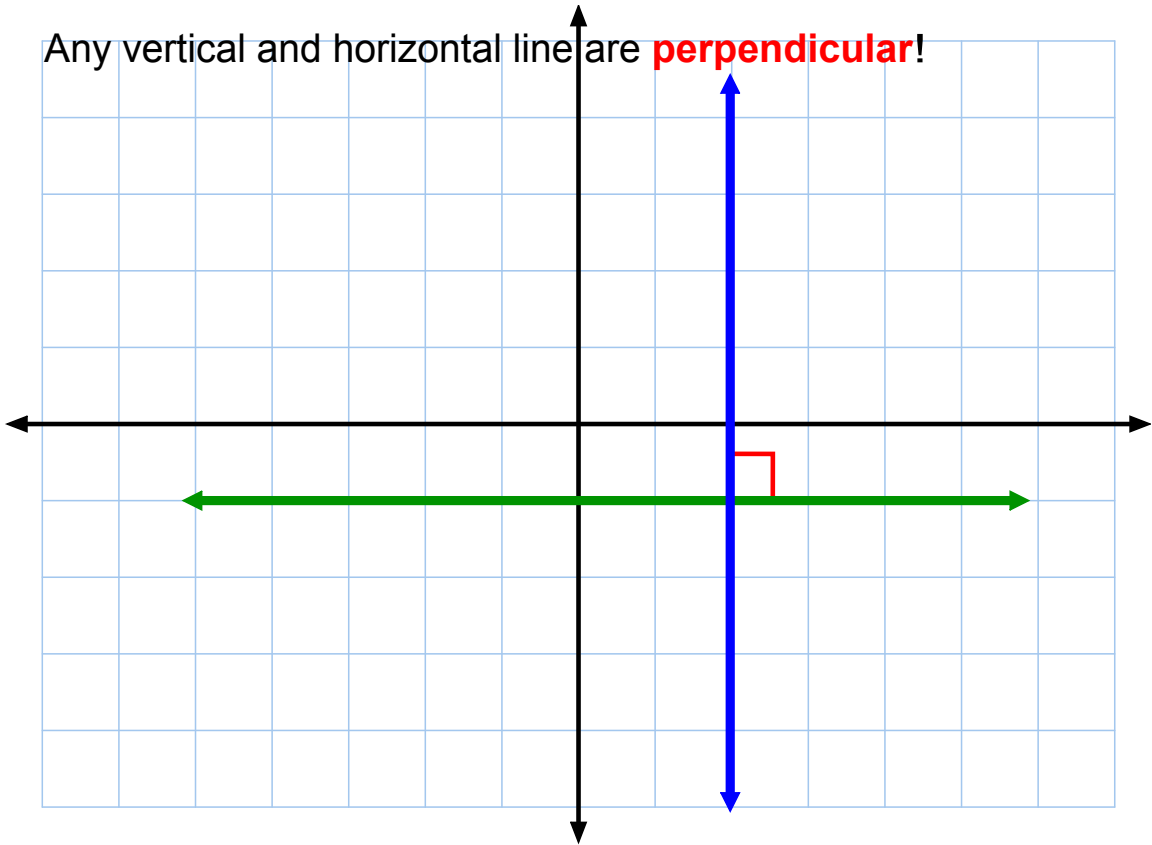
2 lines are perpendicular  
*iff* the product of their slopes is  $-1$ .



Any vertical and horizontal line are ... ?



Any vertical and horizontal line are **perpendicular!**



**1 Are the two lines perpendicular?**

**Line 1: (6, 3) & (1, -1)**

**Line 2: (-4, 4) & (1, -1)**

Yes

No

**2 What is the slope of line 1 from the prior page?**

**Line 1: (6, 3) & (1, -1)**



3 What is the slope of line 2 from the prior page?

Line 2:  $(x_1, y_1)$  &  $(x_2, y_2)$   
Line 2:  $(-4, 4)$  &  $(1, -1)$

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$= \frac{-1 - 4}{1 - (-4)} = \frac{-5}{5} = -1$$

0

1 Write an equation for the line perpendicular to line MN containing point P.

Line MN:  $y + 2x = -8$   
 $m = -2$   
 $y = -2x - 8$   
P(4, 4)

A  $y + 4 = 1/2(x + 4)$

B  $y + 4 = 1/2(x - 4)$

C  $y - 4 = 1/2(x + 4)$

D  $y - 4 = 1/2(x - 4)$

E  $y + 4 = -2(x + 4)$

F  $y + 4 = -2(x - 4)$

G  $y - 4 = -2(x + 4)$

H  $y - 4 = -2(x - 4)$

$m_{\perp} = \frac{1}{2}$

$y - 4 = m(x - 4)$   
 $y - 4 = \frac{1}{2}(x - 4)$



## 1 Pg 162, #24

A  $x = 3/2y$

B  $x = -3/2y$

C  $x = 2/3y$

D  $x = -2/3y$

E  $y = 3/2x$

G  $y = 2/3x$

H  $y = -2/3x$

*no*

F  $y = -3/2x$

*yes*

## L3-6 HW Problems

Pg 161 #1-33 odd,  
37,  
41-45,  
47, 48