 <http://www.math10.ca/lessons/linearFunctions/slopeOfALine/slopeOfALine.php>



2



3



4

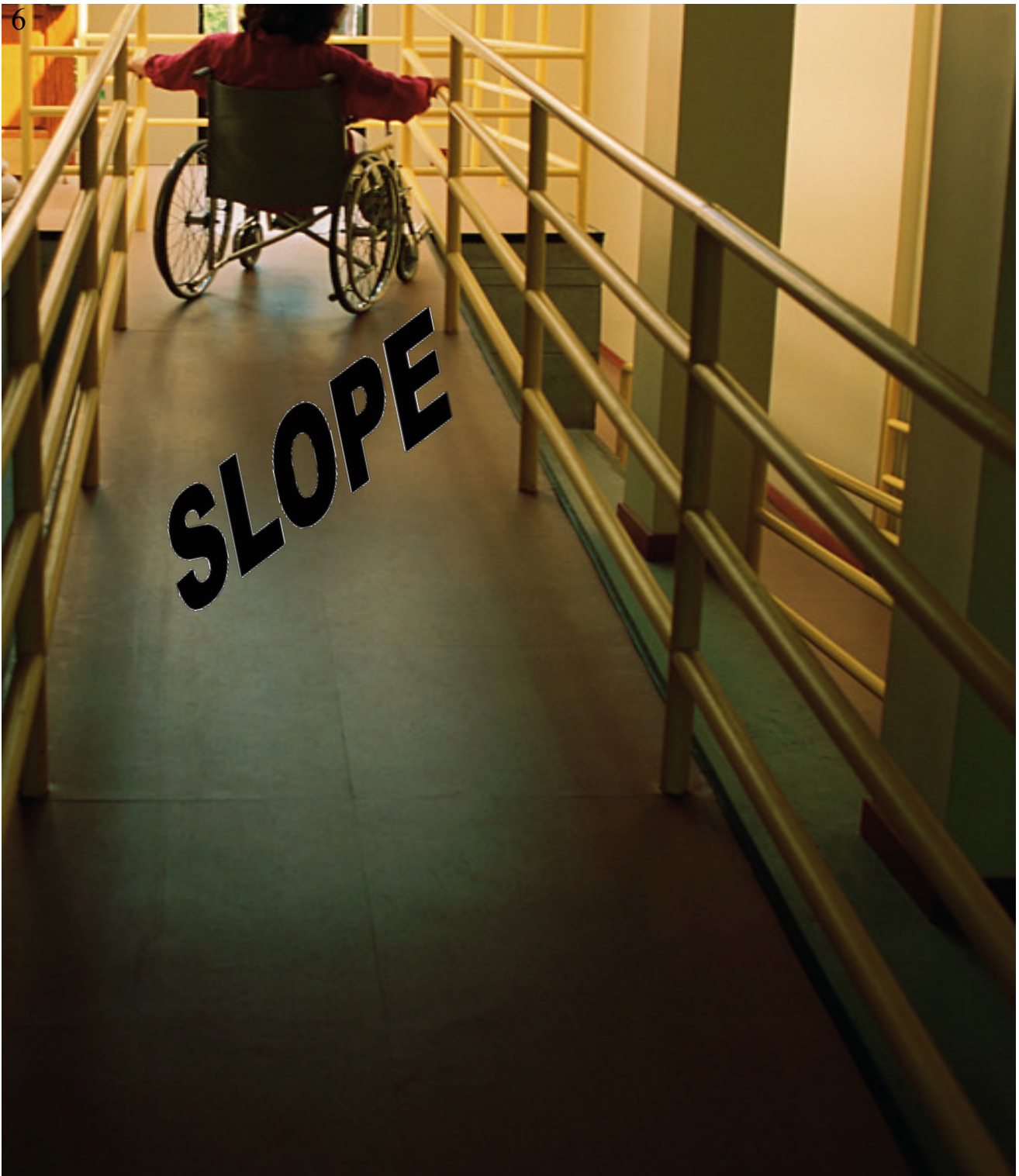


5

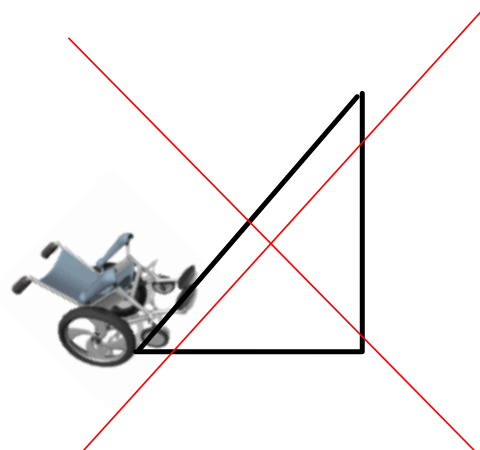
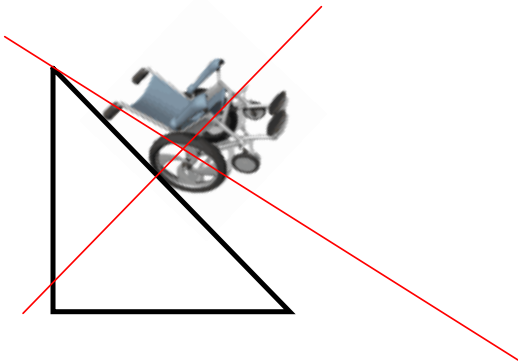
SLOPE?



6



A wheelchair ramp
should not exceed
a slope of
0.125.



8



Building stairs
should
not exceed
a slope of
0.83

0.125

Types of Slope



Calculating slope!

$$\text{slope} = \frac{\text{rise}}{\text{run}}$$



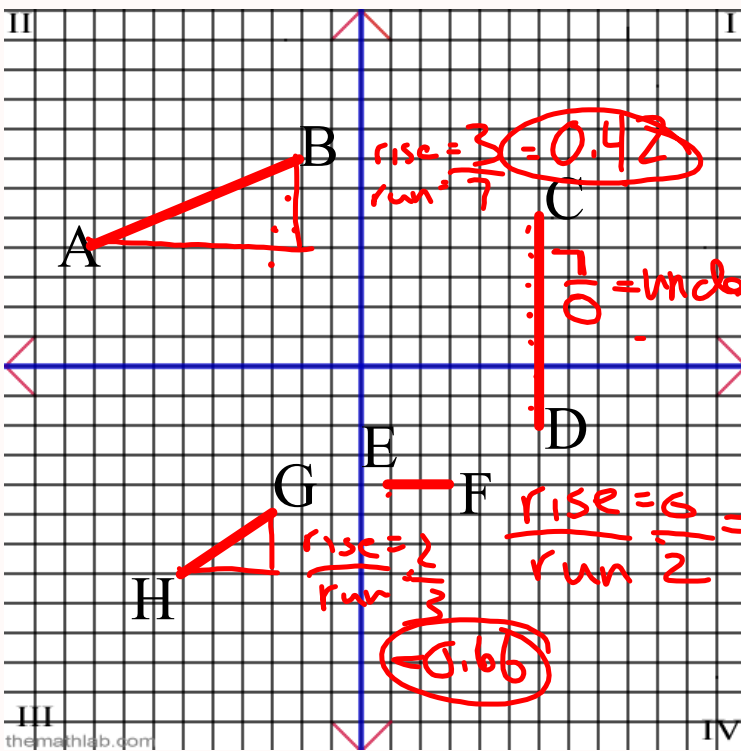
vertical line
y-values.



horizontal
x-values.



11



slope = $\frac{\text{rise}}{\text{run}}$

This is used when you can see the graph!



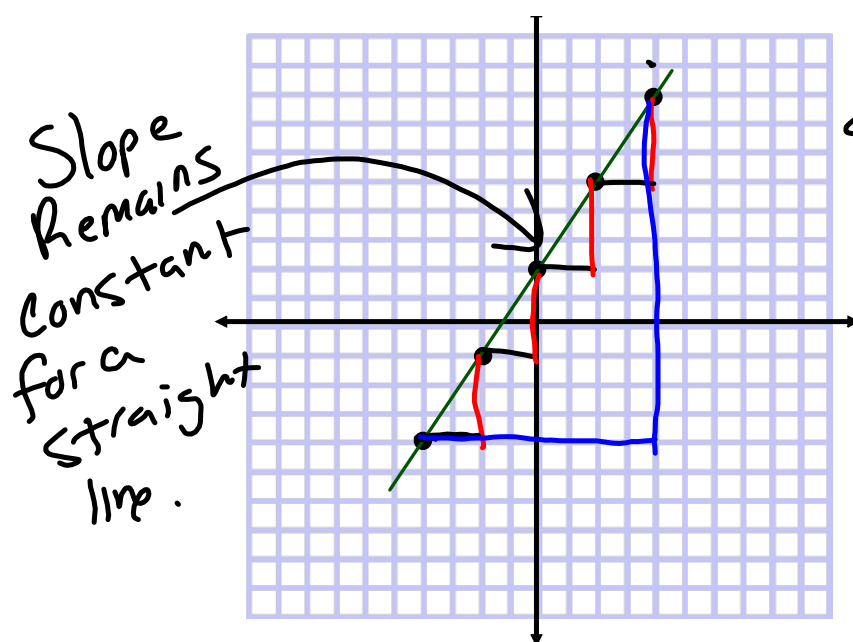
HG is steeper than AB

Slope of a Horizontal Line = 0

←————→ = 0

Slope of a Vertical Line = Undefined or 1/0

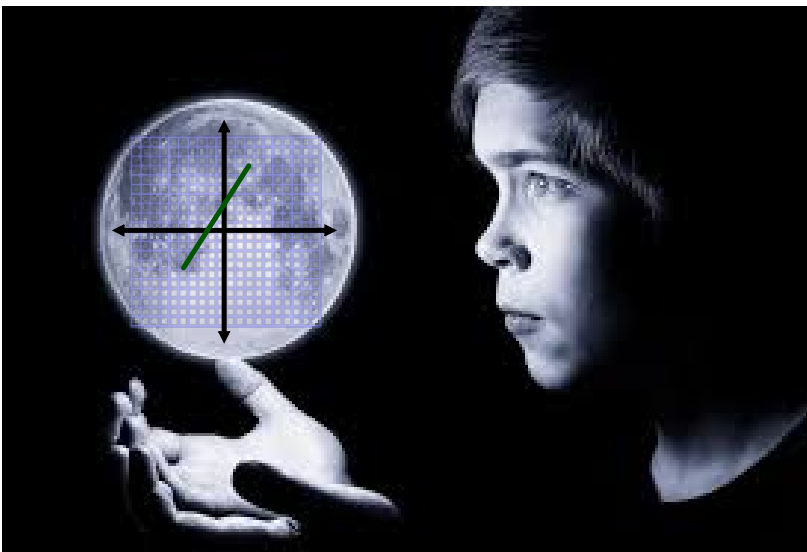
↑
= 1/0 or Undefined
↓



$$\text{Slope} = \frac{\text{Rise}}{\text{Run}}$$

$$\text{Slope} = \frac{3}{2}$$

$$= \frac{3 \cdot 2}{2 \cdot 2} = \frac{6}{4}$$

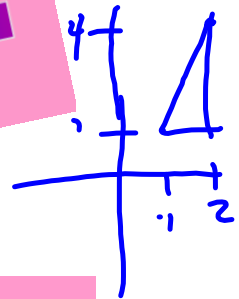


$$m = \frac{\text{rise}}{\text{run}}$$

Only works
when you can

**see the
graph!!**

Calculating slope!



Ordered Pair #1 difference.

$\rightarrow x_1, y_1$
(1, 1)

Ordered Pair 2
 $\rightarrow x_2, y_2$
(4, 2)

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\text{slope} = \frac{2 - 1}{4 - 1}$$

$$\text{slope} = \frac{1}{3} \text{ or } 0.\bar{3}$$

Calculating slope!

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

Find the slope of a line passing through the points (2,-3) and (-5,8).

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

This is used when you are given co-ordinates.

Ordered Pair 1
 $\leftrightarrow (x_1, y_1) \updownarrow$
 $\leftrightarrow (2, -3)$

.. Ordered Pair 2
 $\leftrightarrow (x_2, y_2) \updownarrow$
 $\leftrightarrow (-5, 8)$

$$m = \frac{8 - (-3)}{-5 - (2)}$$

$$m = \frac{8 + 3}{-7}$$

$$m = \frac{11}{-7} \rightarrow -1.57$$

Find the slope of a line passing through the points $(-5, -7)$ and $(-3, 9)$.

Ordered Pair #1
 $(-5, -7)$
 $x_1 \quad y_1$

Ordered Pair #2
 $(-3, 9)$
 $x_2 \quad y_2$

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

$$m = \frac{9 - (-7)}{-3 - (-5)}$$

$$m = \frac{9 + 7}{-3 + 5}$$

$$m = \frac{16}{2} = 8$$

Find the slope of a line passing through the points (6, -4) and (-2,10).

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

OP #1 OP #2 Calculate the slope.

$$m = \frac{y_2 - y_1}{x_2 - x_1} \quad \begin{array}{l} \text{rise} \\ \text{run} \end{array}$$

1. $(3,5) (2,8)$

x_1, y_1 x_2, y_2

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

$$m = \frac{8 - 5}{2 - 3}$$

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

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

2. $(-9,-2) (7,3)$

x_1, y_1 x_2, y_2

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

$$m = \frac{3 - (-2)}{7 - (-9)}$$

$(-)(-) = +$

$$m = \frac{3+2}{7+9}$$

$$m = \frac{5}{16} = 0.31$$

3. $(-1,2) (0,-4)$

x_1, y_1 x_2, y_2

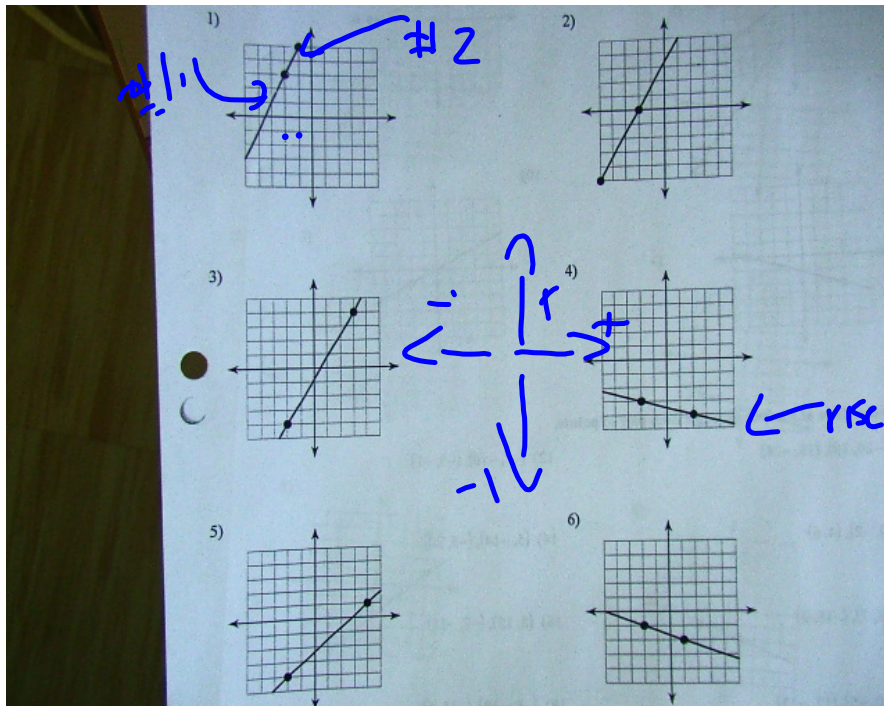
$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{-4 - 2}{0 - (-1)}$$

$$m = \frac{-4 - 2}{0 + 1}$$

$$m = \frac{-6}{1}$$

Homework.
Complete questions
1-10 on sheet.



#1 ordered pairs
 1) $(-2, 3)$
 $(-1, 5)$

rise = 2
 run 1

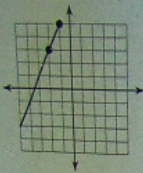
← rise = -1

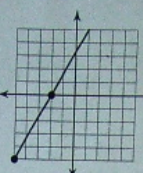
Always
 going
 left to right.

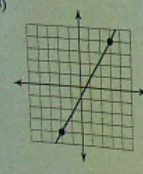
Slope

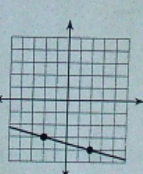
Date _____ Period _____

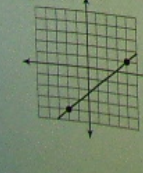
Find the slope of each line.

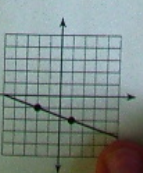
1) 

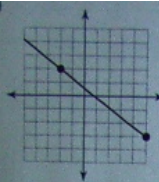
2) 

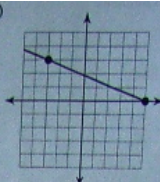
3) 

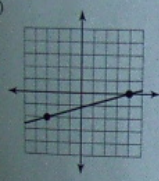
4) 

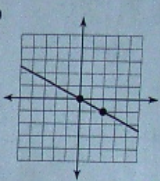
5) 

6) 

7) 

8) 

9) 

10) 

Find the slope of the line through each pair of points.

11) $(-20, 19), (13, -18)$

12) $(-7, -10), (-9, -1)$

13) $(9, -2), (4, 6)$

14) $(5, -14), (-5, 20)$

15) $(-4, 7), (-15, 3)$

16) $(8, 15), (-$

17) $(-20, -$