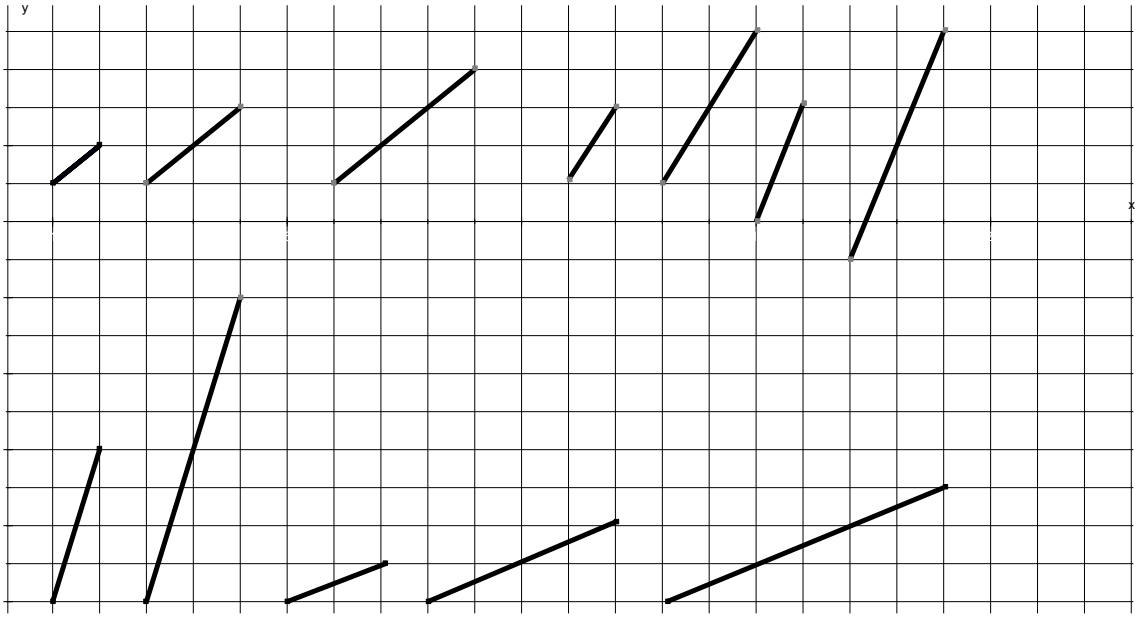
Learning Objective: To explore and develop an understanding of how we measure gradient

For each of the line segments below: work out the rise and tread.

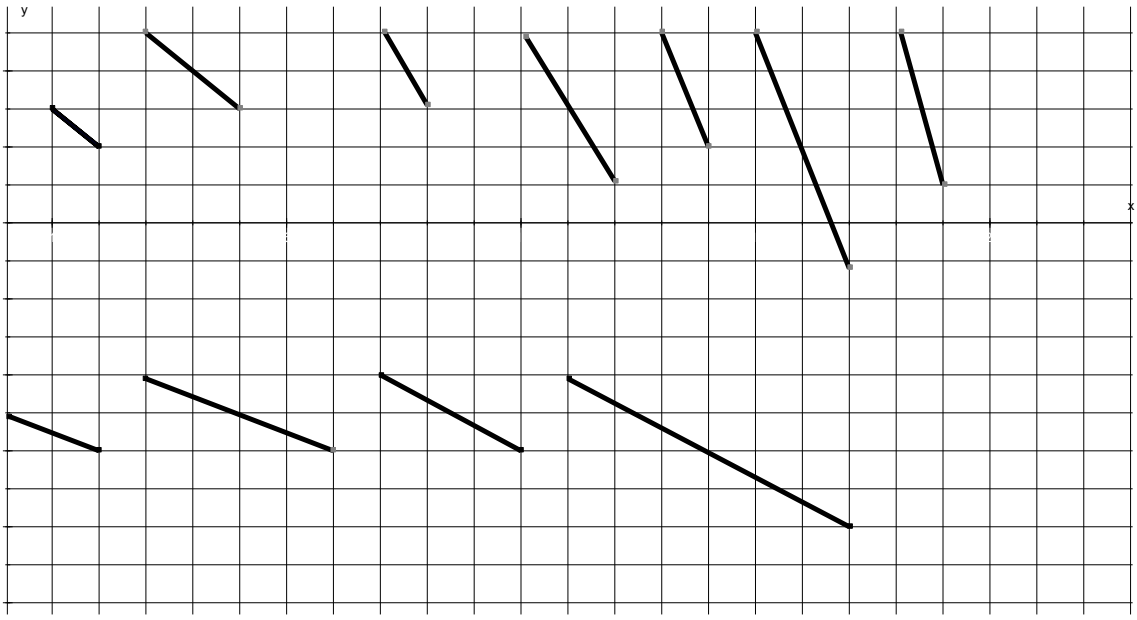
Create a table with the following headings and complete with the information for each of the lines

Line	Rise	Tread	$\frac{rise}{tread}$	$\frac{rise}{tread}$ $cancelled\ down$
1st	1	1	$\frac{1}{1}$	1

Positive Gradients



Negative Gradients (rise is negative)



Learning: Objective 1: To find the gradient between a pair of Coordinates

Learning Objective 2: To use Pythagoras to find the length of the line segment

By plotting the following pairs of coordinates, find the gradient of the line segment joining them

$(0,3)\ and\ (1,5)$	$(5,2) and\ (7,9)$	$(3,2)\ and\ (7,5)$	$(-2,1)\ and\ (1,5)$
$(-3,-2)\ and\ (1,7)$	$(5,7)\ and\ (6,3)$	$(3,6)\ and\ (5,-1)$	$(3,5)\ and\ (5,6.5)$

Now, use Pythagoras to find the length of the line segments

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Extended learning Objective: Perpendicular gradients

For each of the following pairs of perpendicular line segments complete the table below

What do you observe about the pairs of gradients

Pair	Gradient of 1st line	Gradient of 2nd line
1st	$\frac{-2}{1}$	$\frac{1}{2}$
2nd		
3rd		
4th		
5th		

Remember that:

$$Gradient = \frac{rise}{tread}$$

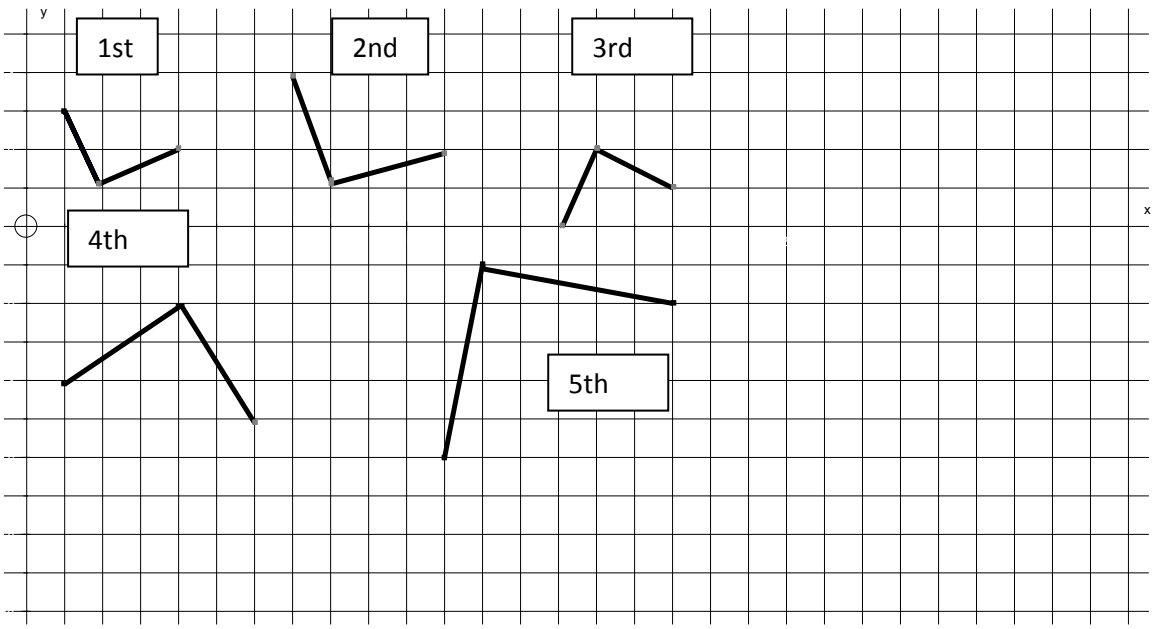

Table for gradient investigation

Line	Rise	Tread	$\frac{rise}{tread}$	$\frac{rise}{tread}$ $cancelled\ down$
1st	1	1	$\frac{1}{1}$	1