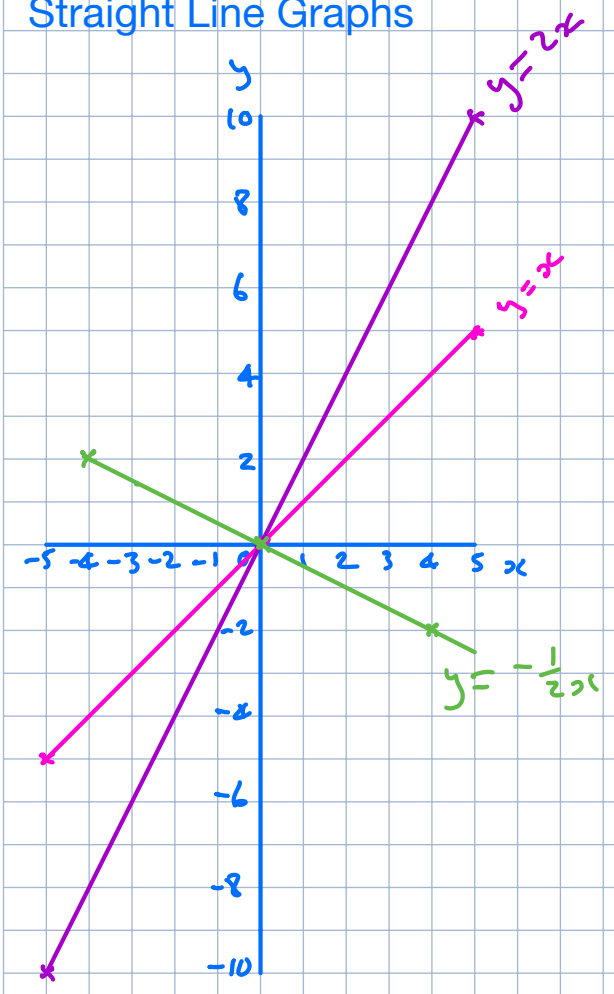
Straight Line Graphs



$y = x$

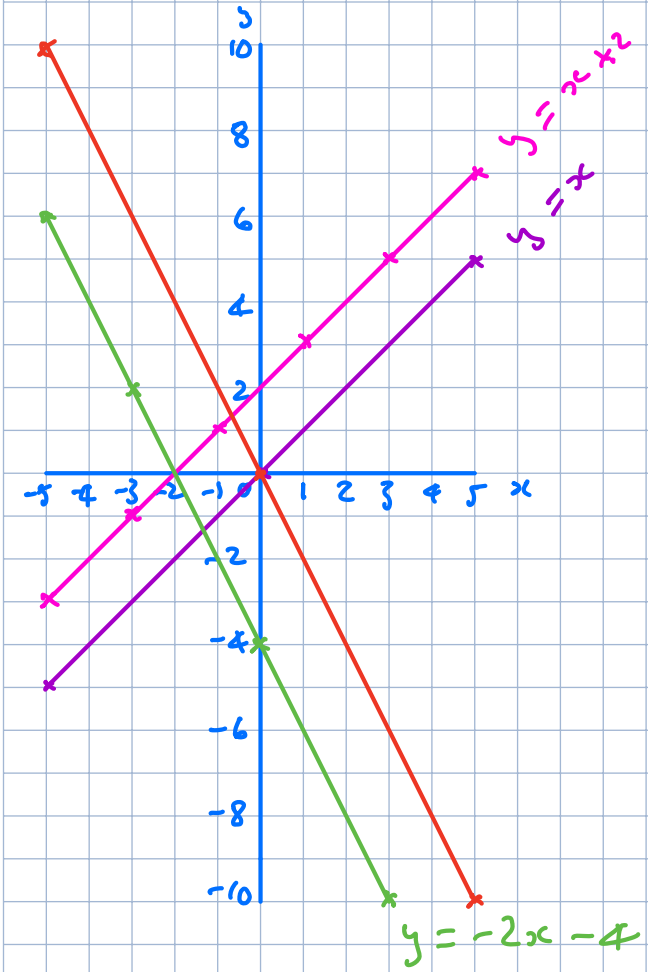
x	-5	0	5
y	-5	0	5

$y = 2x$

x	-5	0	5
y	-10	0	10

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

x	-4	0	4
y	2	0	-2



$y = x + 2$

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
y	-3	-2	-1	0	1	2	3	4	5	6	7

$y = x$

$y = -2x - 4$

x	-5	-3	0	3	5
y	6	2	-4	-10	-14

$y = -2x$

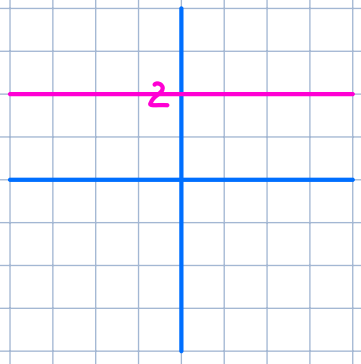
x	-5	0	5
y	+10	0	-10

$$y = mx + c$$

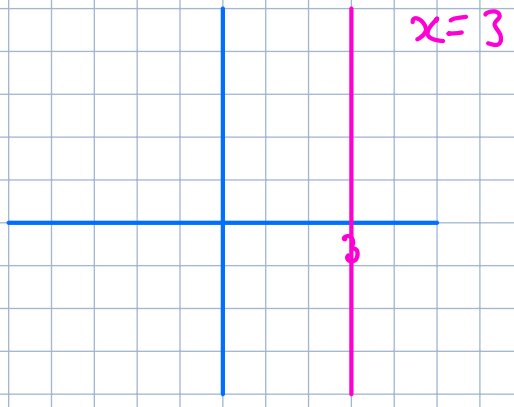
Gradient — y-intercept

This is the standard form of a straight line

Vertical and Horizontal Lines



$y = 2$



Horizontal lines y = constant

Vertical lines x = constant

Exploring $y = mx + c$

$0 < m < 1$ slope less than 45° shallow

$m = 1$ slope 45°

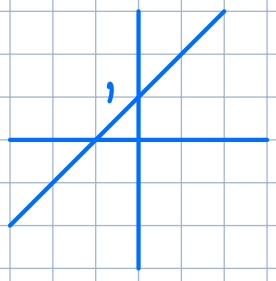
$m > 1$ slope more than 45° steep

m negative slope backwards

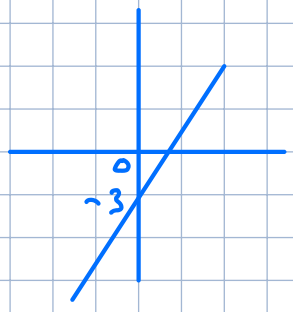
m positive slope forwards

Example Sketches

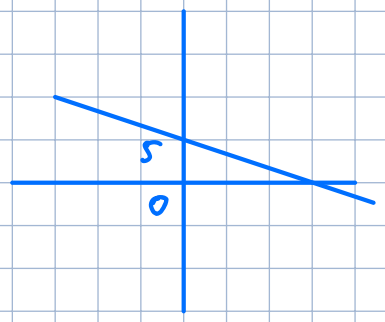
$y = x + 1$



$y = 2x - 3$

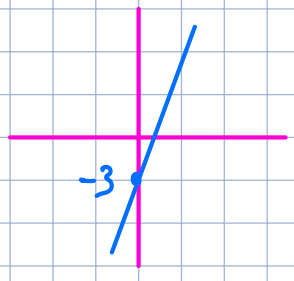


$y = -\frac{1}{4}x + 5$

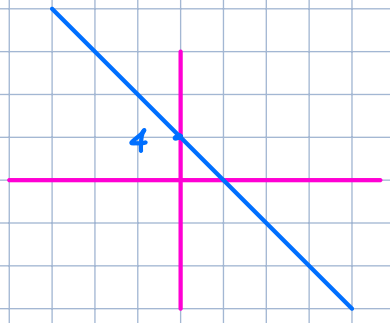


Exercise

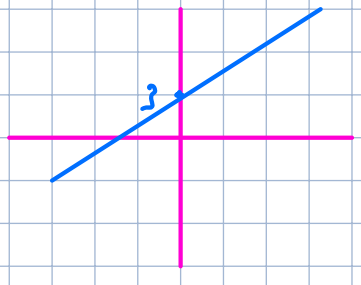
1) $y = 4x - 3$



2) $y = -x + 4$



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



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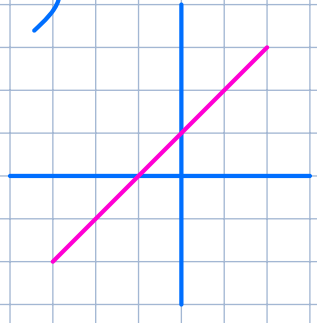
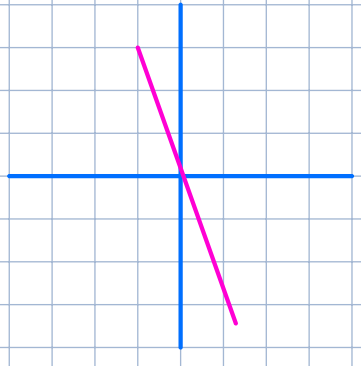
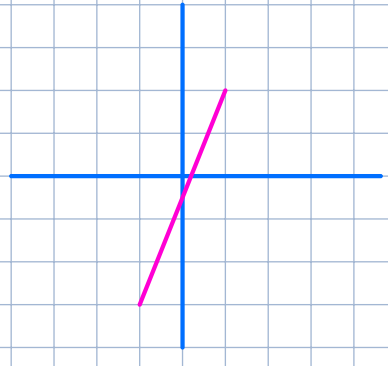
1)



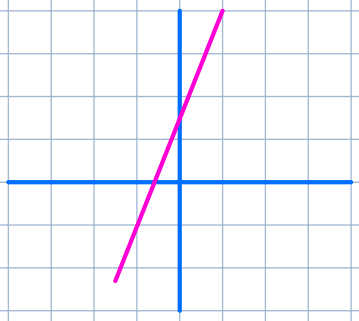
2)



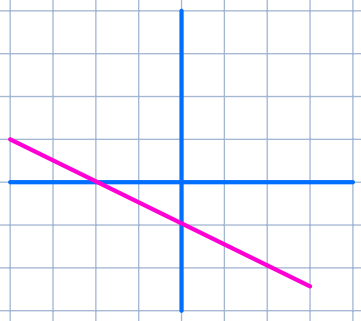
3)



4)



5)



A $y = 3x + 5$ B $y = 2x - 1$ C $y = -\frac{1}{2}x - 4$

D $y = x + 3$ E $y = -2x$

A 4 B 3 C 5 D 1 E 2