

Plotting Graphs Given their Equations

Starter

1. (Review of last lesson) Complete the table of value for the straight line $y = 7 - 3x$.

x	-4	0	5
y			

Working: When $x = -4$: $y = 7 - 3 \times (-4) = 7 + 12 = 19$
 When $x = 0$: $y = 7 - 3 \times 0 = 7$
 When $x = 5$: $y = 7 - 3 \times 5 = 7 - 15 = -8$

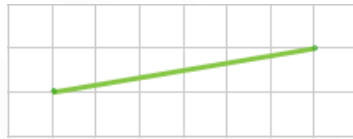
x	-4	0	5
y	19	7	-8

E.g. 1 Calculate the gradient of these lines:

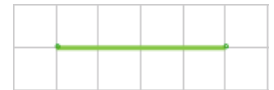
(a)



(b)



(c)



Working: (a) Gradient = $\frac{\text{rise}}{\text{run}} = \frac{-2}{4} = -\frac{1}{2}$
 (b) Gradient = $\frac{\text{rise}}{\text{run}} = \frac{1}{6}$
 (c) Gradient = $\frac{\text{rise}}{\text{run}} = \frac{0}{4} = 0$

N.B. Horizontal lines have a gradient of zero.

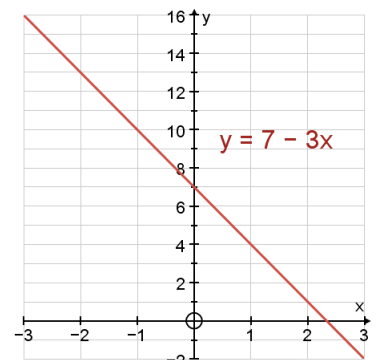
E.g. 2 Copy and complete the table of values for the line $y = 7 - 3x$.

x	-3	-2	-1	0	1	2	3
y							

Hence draw the graph of $y = 7 - 3x$.

Working: When $x = -3$, $y = 7 - 3 \times (-3) = 7 + 9 = 16$
 When $x = 2$, $y = 7 - 3 \times 2 = 7 - 6 = 1$

x	-3	-2	-1	0	1	2	3
y	16	13	10	7	4	1	-2



Exercise

p44 Ex 14.3 Qu 1-3 (gradients)

p44 Ex 14.3 Qu 4-13 (table of values)

[Textbook answers \(only available during a lockdown\)](#)

