

2.6 Getting The Slope Of A Line From Its' Equation

For this, first you need to express the line in 'slope-intercept' form, $y = mx + c$.

The coefficient of y must equal 1, so that we can read what our value of slope, 'm', is, directly from the equation.^v

EXAMPLE:

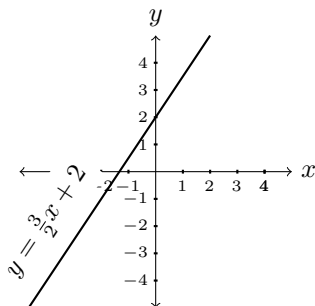
Find the slopes of the following lines: (i) $2y = 3x + 4$, (ii) $2x + 3y = 7$, (iii) $y = \pi x + 1$.

(i)

We express the equation in the form $y = mx + c$. *The coefficient of y must be 1.*

$$\begin{aligned} 2y &= 3x + 4 \\ \Rightarrow \frac{2y}{2} &= \frac{3x + 4}{2} \quad \dots \text{ (dividing both sides by 2.)} \\ \Rightarrow y &= \frac{3}{2}x + \frac{4}{2} \\ \Rightarrow y &= \frac{3}{2}x + 2 \end{aligned}$$

- Reading directly from the equation gives slope, $m = \frac{3}{2}$

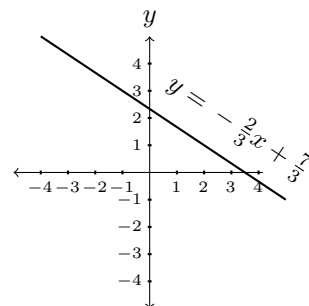


(ii)

We express the equation in the form $y = mx + c$. *The coefficient of y must be 1.*

$$\begin{aligned} 2x + 3y &= 7 \\ \Rightarrow 3y &= -2x + 7 \quad \dots \text{ (subtracting } 2x \text{ from both sides.)} \\ \Rightarrow \frac{3y}{3} &= \frac{-2x + 7}{3} \quad \dots \text{ (dividing both sides by 3.)} \\ \Rightarrow y &= -\frac{2}{3}x + \frac{7}{3} \end{aligned}$$

- Reading directly from the equation gives slope, $m = -\frac{2}{3}$



(iii)

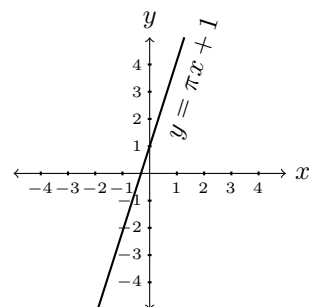
We express the equation in the form $y = mx + c$. *The coefficient of y must be 1.*

$$y = \pi x + 1$$

The line is already in the form $y = mx + c$.

We need do nothing else other than just read off its' slope. This is an example of a line with its' slope as an 'irrational' number. (See how it is graphed. You might visually estimate the slope as $m = 3.14$ - which approximately equals π .)

- Reading directly from the equation gives slope, $m = \pi$



^vRemember, it's $y = mx + c$, not " $2y = mx + c$ ". In that case, we would have forgotten to divide the value of the slope by 2 and the answer we would read from the equation would actually be equal to $2m$, twice the slope!

- SMARTPHONE
- COMPUTER
- TABLET-PC
- PRINTED OUT (A4 PAPER)

visit:

<https://projectmathsnotes.ie/>

AND PURCHASE YOUR COPY ONLINE

Project Maths NotesTM for Leaving Cert

- It's an **investment** in the future of any young person
- Prepares you for the most difficult exam **questions**
- Sorts out **common problems** most students have
- Enables the learner to actually **understand** maths
- Download to your **smart device** - study **on the go**



**HIGHER /
ORDINARY**

Copyright Notice

All notes are copyright © M. I. Publishing 1433-41. All rights reserved.

These product samples are for promotional purposes only and may not be edited or parsed.

You must be sufficiently licenced to use notes in private tuition, "grinds" classes, or for teaching.

To order, please visit <https://projectmathsnotes.ie/>