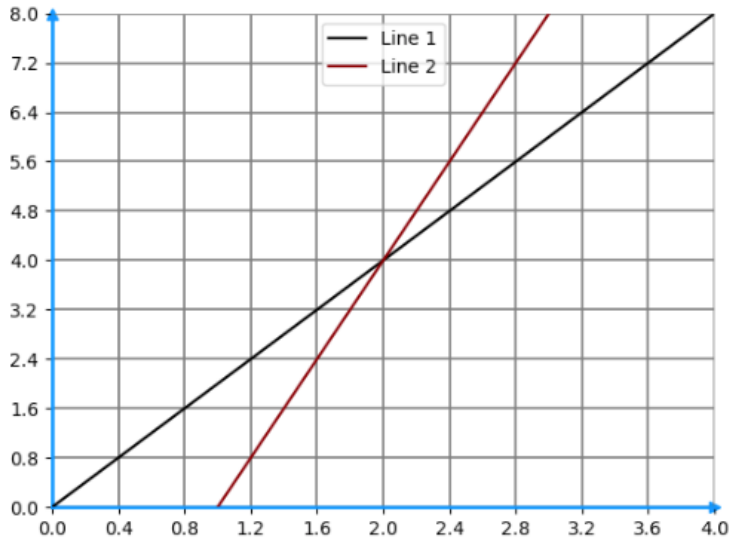
1. Consider the following lines. 1 / 1 point

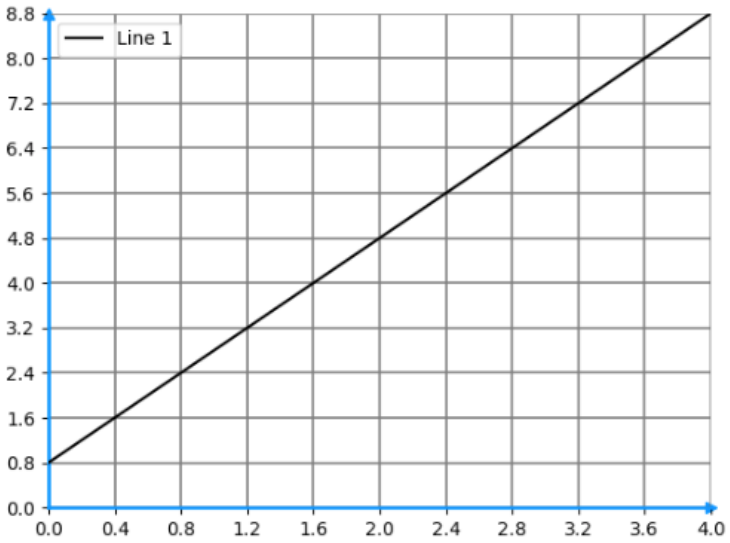


What can be said about their slopes at their intersection?

- ○ Slope(Line 1) > Slope(Line 2).
- ◉ Slope(Line 1) < Slope(Line 2).
- ○ Slope(Line 1) = Slope(Line 2).
- ○ It is impossible to infer anything with the given information.

Correct
Correct! Line 1 is steeper than Line 2, therefore its slope is higher.

2. Given the following graph, what is the slope of the line? You can pick any two points to calculate the slope. 1 / 1 point



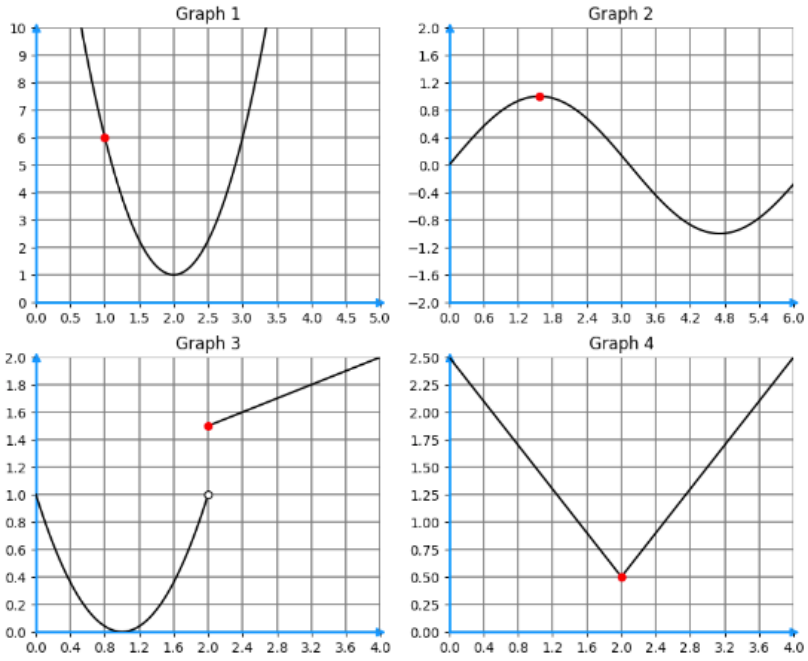
2

Correct

Correct! For a line, the slope is $\frac{\Delta f}{\Delta x}$.

3. Consider the graphs below

1 / 1 point



What can be said about the curve's slopes at the red point, which we will call P1, P2, P3 and P4, corresponding to the red points in the graphs 1, 2, 3 and 4, respectively?

- ○ Slope(P1) > 0, Slope(P2) < 0, Slope(P3) does not exist, Slope(P4) = 0.
- ○ Slope(P1) < 0, Slope(P2) = 0, Slope(P3) > 0, Slope(P4) does not exist.
- ◉ Slope(P1) < 0, Slope(P2) = 0, Slope(P3) does not exist, Slope(P4) does not exist.
- ○ Slope(P1) < 0, Slope(P2) = 0, Slope(P3) does not exist, Slope(P4) > 0.

Correct
Correct!

4. Let $y_1 = ax + b$ and $y_2 = cx + d$, where $a, b, c, d \in \mathbb{R}$. Check all the sentences that are true. 1 / 1 point

- [x] The slope of y_1 is a.

  Correct
  Correct! For a line, its rate of change depends only on a, since it is the only factor that varies in the expression.

- [ ] The slope of y_1 is $-\frac{b}{a}$.
- [x] If $a > c$ then the slope of y_1 is greater than the slope of y_2.

  Correct
  Correct! Remember that the slope of a line is the value that comes with the x.

- [x] The slope of y_1 does not depend on b.

  Correct
  Correct! In this case, b is a constant term, therefore, does not impact on the rate of change.

5. Which of the following sentences are true (check all that apply)? 1 / 1 point

- [ ] If the slope of a function is constant, then the function is constant.
- [ ] If the slope of a function is always positive, then the function is always positive.
- [ ] Let f, g be real functions. If $f'(x) > g'(x)$ then $f(x) > g(x)$.
- [x] Let f be a real function. If $f'(x) > 0$ for every x in $\mathbb{R}$, then f is increasing.

  Correct
  Correct! If the rate of change of a function is always positive, it means that it is always increasing.