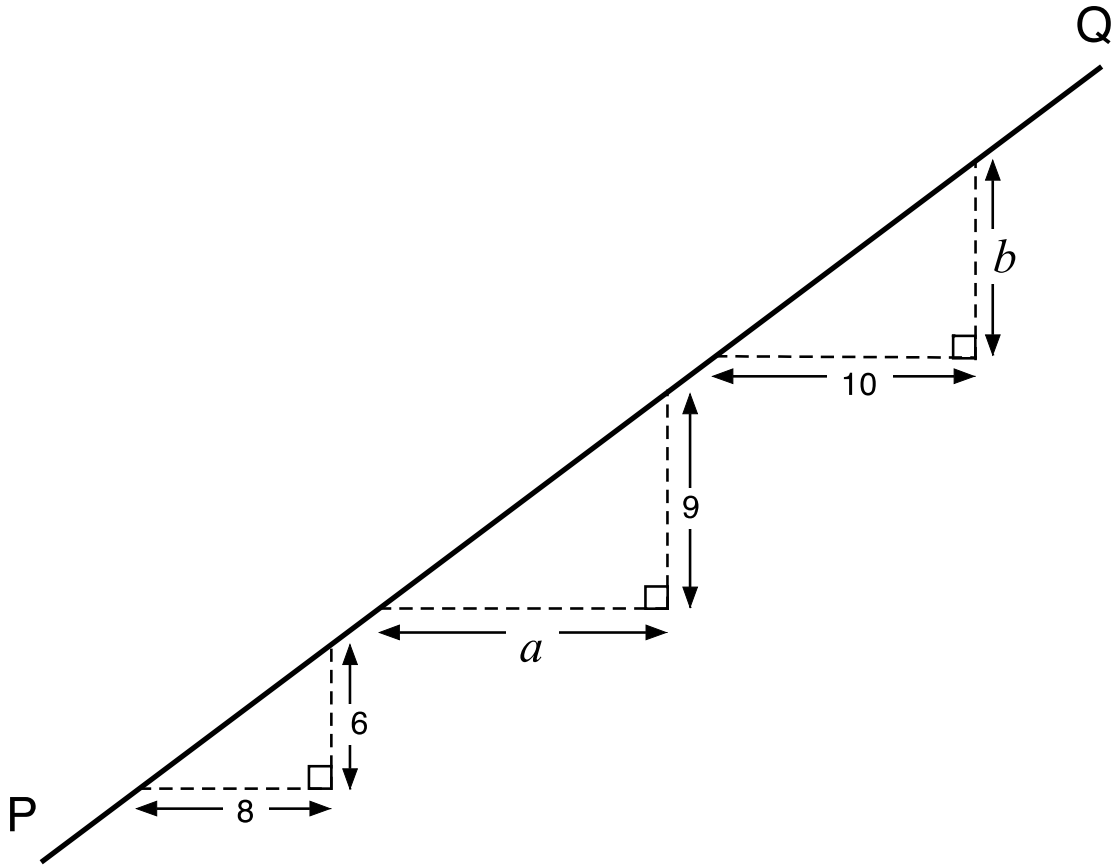


Lines, Slopes and Equations

- Line PQ is a straight line.
Three similar right-angled triangles have been drawn beneath this line.
They have not been drawn to scale.



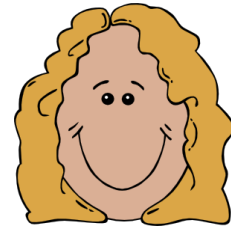
Calculate the lengths marked a and b .
Show all your reasoning in the space provided.

2. Joseph and Catherine are trying to decide whether or not the three points $(2,1)$, $(5,7)$ and $(11,18)$ lie on a straight line.



Joseph

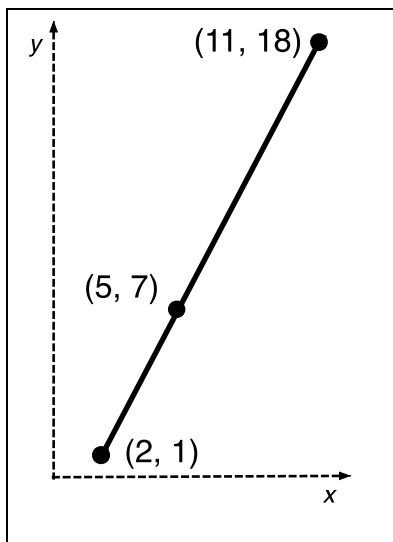
I quickly plotted the points and I think they lie on a straight line.



Catherine

I disagree. I don't think the points lie in a straight line. It looks straight, but it might not be. You never can tell from drawings.

Without drawing, decide whether or not the three points lie on a straight line. Show all your reasoning.



3. If the straight line that passes through $(2,1)$ and $(5, 7)$ is drawn accurately, it passes through the point $(20, y)$. What number does y stand for?

The point $(x, 21)$ lies on the same line. What number does x stand for?

What is the equation of the straight line that passes through $(2,1)$ and $(5, 7)$?
