Graph of a Linear Function

1. Use the slope triangle to determine the slope of the straight line through the given points.

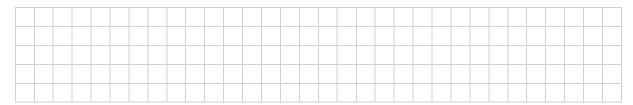
a) *A* (5|7), *B* (-3|8)

b) A (1|2), B (3|4)

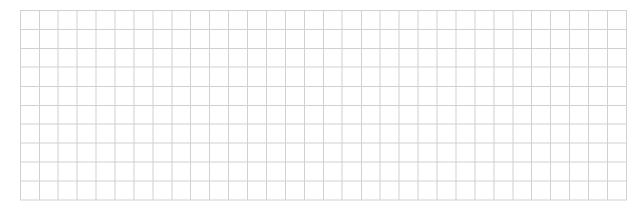
2. Why are the lines $g: y = -0.5 \cdot x + 2$ and $h: y = -0.5 \cdot x - 3$ parallel? Calculate the distance between the two straight lines.



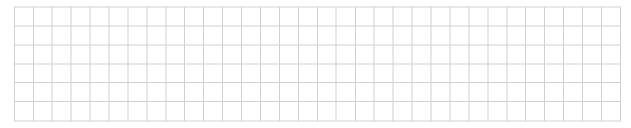
- 3. Experiments with sketchometry
 - a) What is the slope of the straight line through the points A(0.5|3.5) and B(4|-1)? What is the equation of the function?



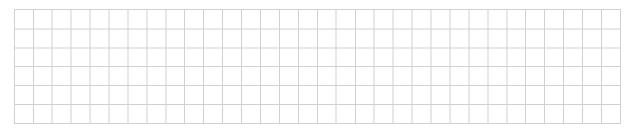
b) Confirm the equation by calculation.



- 4. Experiments with sketchometry
 - a) Draw a straight line through the points A(-3|-2) and B(2,5|3,5).
 - b) Write the equation of this line.



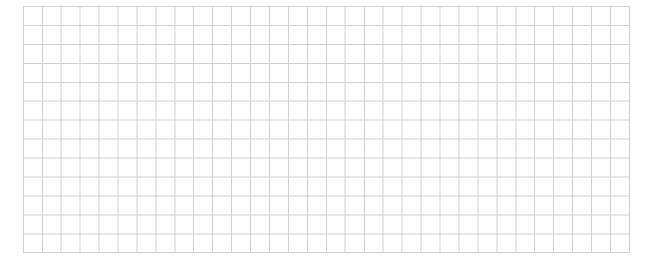
- c) Draw the perpendicular to this line that passes through the point C(2|1).
- d) Write the equation of this perpendicular line.



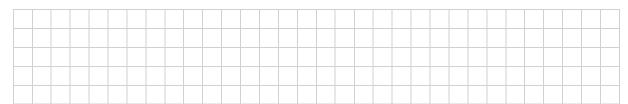
e) Calculate the point of intersection of the two lines.



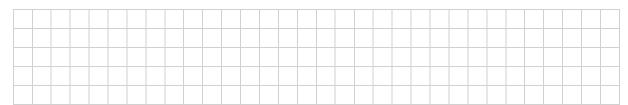
- "Check" your finding with sketchometry.
- 5. Write an equation for the line that passes through the point P(3|5) and is perpendicular to the line $y = 3 \cdot x + 2$.



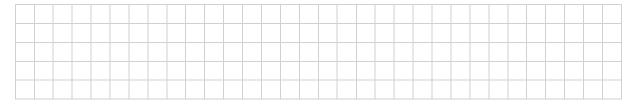
6. Find the equation of the line that is parallel to the x-axis and passes through the point P(-3|4).



7. Find the equation of the line g that is parallel to line $y = 3 \cdot x - 2$ and passes through the point P(1|0).

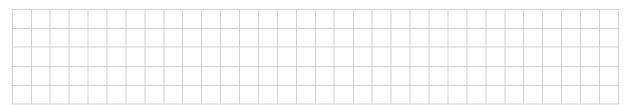


8. Calculate th point of intersection of the two lines $y = 3 \cdot x + 4$ and $y = -2 \cdot x + 14$.



Control your result with a sketchometry construction.

9. For a linear function f(x) holds: f(0) = 3 and f(-2) = 4. Find f(x).



10. For which x-values holds f(x) > 0?

