

Algebra 1 · Linear Functions: Slope-Intercept, Point-Slope and Standard Form · Test

Common Core F-IF.C.7a, F-LE.A.1a, F-LE.A.2, A-CED.A.2 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

This test covers slope, the three forms of a linear equation, graphing, parallel and perpendicular lines, and linear models. It has nine questions worth 20 points in total. Show your work, write answers in simplest form, and use a straightedge for graphs. A calculator is not needed.

Test information

- **Grade:** Algebra 1
- **Chapter:** Linear Functions: Slope-Intercept, Point-Slope and Standard Form
- **Common Core:** F-IF.C.7a, F-LE.A.1a, F-LE.A.2, A-CED.A.2
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 2 pts; Question 5: 2 pts; Question 6: 2 pts; Question 7: 2 pts; Question 8: 3 pts; Question 9: 3 pts)

Question 1: Slope and direction (2 points)

- Find the slope of the line through $(-5, 4)$ and $(3, -2)$. (1 point)
- Does the line rise or fall from left to right? Explain. (1 point)

Question 2: Standard form to slope-intercept (2 points)

Rewrite $5x - 2y = 10$ in slope-intercept form.

- Write the equation. (1 point)
- State the slope and the y-intercept. (1 point)

Question 3: Slope and a point (2 points)

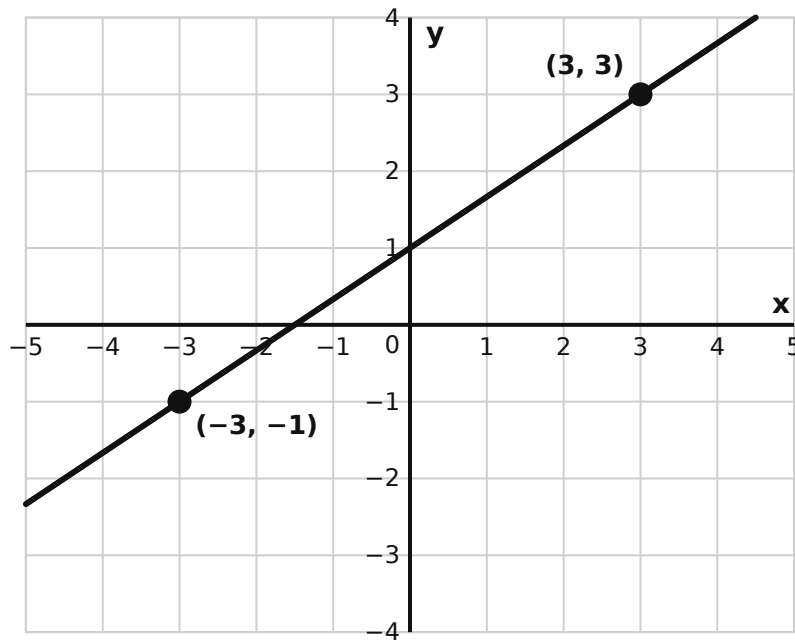
A line has slope $-\frac{1}{2}$ and passes through $(-2, 3)$.

- Write an equation of the line in point-slope form. (1 point)

b. Write the equation in slope-intercept form. (1 point)

Question 4: Equation from a graph (2 points)

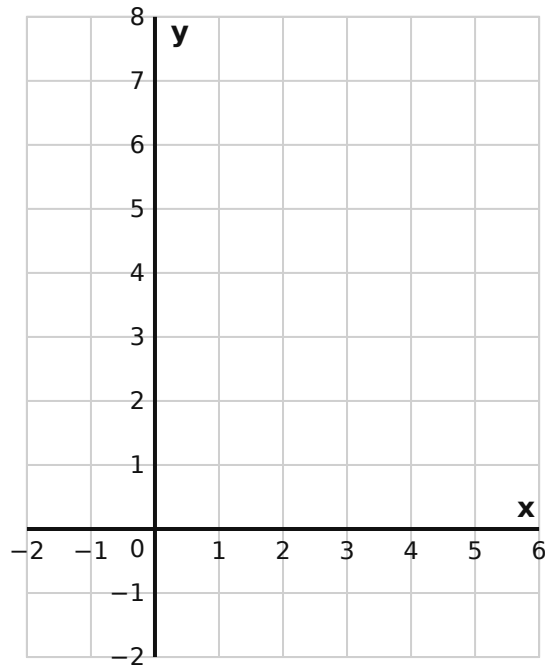
Write the equation of the line shown in slope-intercept form.



A line through two marked points.

Question 5: Graph from standard form (2 points)

Graph $3x + 2y = 12$ on the grid.



Blank grid.

Question 6: Parallel and perpendicular (2 points)

Line L has equation $y = -\frac{3}{4}x + 2$.

- Write the equation of the line through $(8,1)$ that is parallel to L . (1 point)
- Find the slope of any line perpendicular to L . (1 point)

Question 7: Classify pairs of lines (2 points)

Decide whether each pair of lines is parallel, perpendicular, or neither. Justify with slopes.

- $y = 2x + 5$ and $4x - 2y = 6$ (1 point)
- $3x + 4y = 8$ and $4x - 3y = 9$ (1 point)

Question 8: Bakery order (3 points)

Mei's bakery charges a delivery fee plus a fixed price per box of muffins. An order of 4 boxes costs \$38 and an order of 10 boxes costs \$86. Let C be the cost in dollars for b boxes.

- Find the price per box. (1 point)
- Write an equation for C in terms of b . (1 point)
- Find the cost of 15 boxes. (1 point)

Question 9: Draining tank (3 points)

A tank is being drained. The table shows the number of gallons g in the tank after t minutes.

Minutes t	0	5	10	15
Gallons g	120	105	90	75

Water in the tank over time.

- Show that the rate of change is constant and state it. (1 point)
- Write an equation for g in terms of t . (1 point)
- When will the tank be empty? (1 point)