

Writing and Graphing Linear Functions in Three Forms

Grade 9 – Algebra 1 math · Test · Standards: F-IF.C.7a, F-LE.A.1a, F-LE.A.2, A-CED.A.2

Name: _____ Date: _____ Class: _____

This test has 9 questions worth 20 points in total. Show the slope calculation and the form you use, label graph points and write model answers with units. A calculator is allowed. Plan on about 45 minutes.

Standards: F-IF.C.7a, F-LE.A.1a, F-LE.A.2, A-CED.A.2 · **Level:** Grade 9 Algebra 1

Time: 45 minutes · 9 questions · Total: 20 points · Calculator: as allowed by your teacher

Question 1 Slope (2 points)

Find the slope of the line through $(-3, 7)$ and $(5, -1)$.

Question 2 Line through two points (2 points)

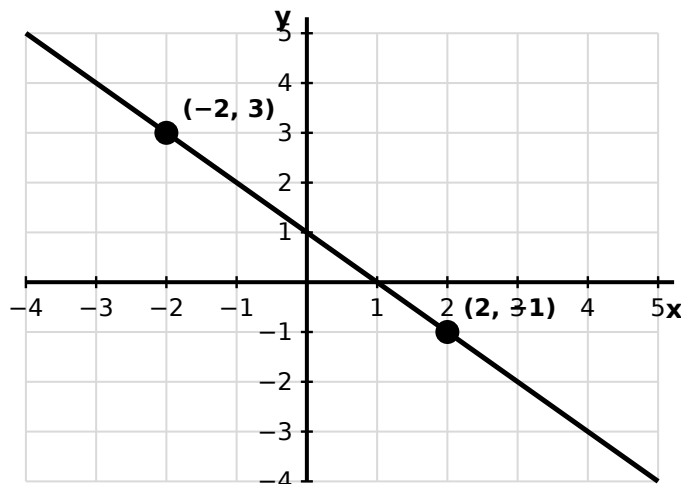
Write the equation of the line through $(4, 3)$ and $(8, 9)$ in slope-intercept form.

Question 3 Rewrite in slope-intercept form (2 points)

Rewrite $5x - 2y = 14$ in slope-intercept form and state the slope and y-intercept.

Question 4 Equation from a graph (2 points)

The graph shows a line passing through two labeled points. Find its slope, then write its equation in slope-intercept form.



Question 5 Parallel line (2 points)

Write the equation of the line through $(-2, 6)$ that is parallel to $y = -3x + 4$.

Question 6 Perpendicular line (2 points)

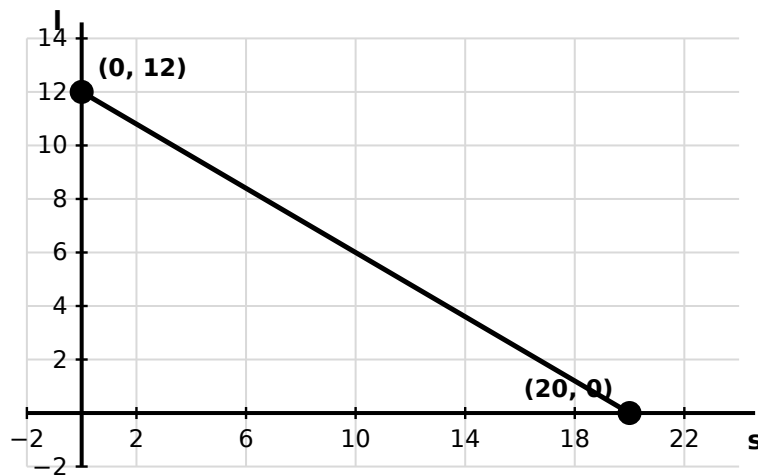
Write the equation of the line through $(10, -3)$ that is perpendicular to $y = \frac{2}{5}x - 1$.

Question 7 Kayak rental model (3 points)

A kayak shop charges \$39 for 2 hours and \$75 for 5 hours, at a constant hourly rate plus a flat fee. (a) Find the cost per hour. (1 point) (b) Write the cost C for h hours. (1 point) (c) Interpret the y-intercept. (1 point)

Question 8 Booth sales (3 points)

A booth sells small bags for \$3 and large bags for \$5 and takes in \$60. Let s be small bags and l be large bags, as in the graph.



Sales line $3s + 5l = 60$.

(a) Write an equation in standard form and give both intercepts. (1 point) (b) Interpret the l -intercept. (1 point) (c) How many small bags go with 6 large bags? (1 point)

Question 9 Compare two lines (2 points)

Line A is $y = -2x + 9$. Line B passes through $(1, 3)$ and $(4, 12)$. (a) Find the slope of line B. (1 point) (b) Which line is increasing, and which is steeper? (1 point)