

Algebra 1 - Writing Linear Equations and Functions - Test Answer Key

Common Core F-LE.A.2, F-BF.A.1a, A-CED.A.2 · maths-pdf.fr/en/

These are worked solutions for the writing linear equations test with a scoring guide for every question. Award points for correct method as well as for the final answer. The test totals 20 points, so add the question scores to find the final grade.

Algebra 1 · Common Core State Standards: **F-LE.A.2, F-BF.A.1a, A-CED.A.2**

Question 1 - Slope-intercept form [2 pts]

a) $y = 5x - 1$.

b) $y = -\frac{1}{3}x + 4$.

Scoring: 1 point for each equation.

Question 2 - Point-slope [2 pts]

Point-slope: $y - 6 = 4(x + 1)$.

Distribute: $y - 6 = 4x + 4$, so $y = 4x + 10$.

$y - 6 = 4(x + 1)$; $y = 4x + 10$

Scoring: 1 point for each form.

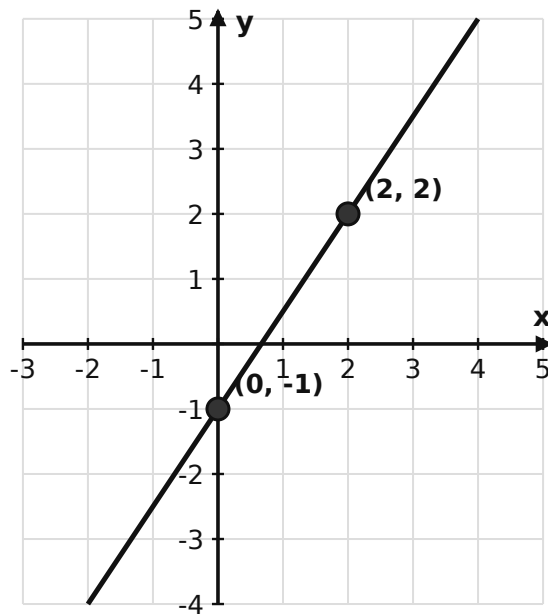
Question 3 - Two points [2 pts]

Slope: $\frac{5 - (-3)}{6 - 2} = 2$. Substitute $(2, -3)$: $-3 = 2(2) + b$, so $b = -7$.

$y = 2x - 7$

Scoring: 1 point for the slope; 1 point for the equation.

Question 4 - Equation from a graph [2 pts]



Slope $\frac{3}{2}$, intercept -1.

The y-intercept is -1 . From $(0, -1)$ to $(2, 2)$: rise 3, run 2.

$$y = \frac{3}{2}x - 1$$

Scoring: 1 point for the slope; 1 point for the intercept and equation.

Question 5 - Equation from a table [2 pts]

When x increases by 2, y increases by 8, so $m = 4$.

Substitute $(1, 5)$: $5 = 4(1) + b$, so $b = 1$.

$$y = 4x + 1$$

Scoring: 1 point for the slope; 1 point for the equation.

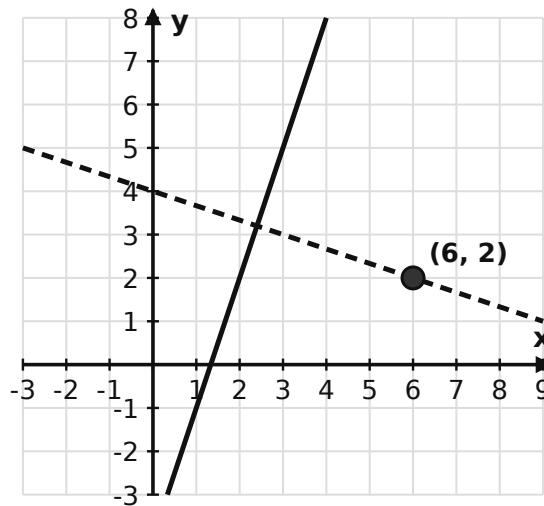
Question 6 - Parallel line [2 pts]

The slope is -3 . Substitute $(2, 5)$: $5 = -3(2) + b$, so $b = 11$.

$$y = -3x + 11$$

Scoring: 1 point for the slope; 1 point for the equation.

Question 7 - Perpendicular line [3 pts]



Dashed line: perpendicular through (6, 2).

a) The negative reciprocal of 3 is $-\frac{1}{3}$.

b) $2 = -\frac{1}{3}(6) + b$, so $2 = -2 + b$ and $b = 4$.

$$y = -\frac{1}{3}x + 4$$

Scoring: part a, 1 point; part b, 1 point for substituting and 1 point for the equation.

Question 8 - Taxi fare model [3 pts]

a) $\frac{28-13}{10-4} = \frac{15}{6} = 2.5$ dollars per mile.

b) $13 = 2.5(4) + b$, so $b = 3$: $C = 2.5m + 3$.

c) $2.5(15) + 3 = 40.5$.

\$2.50 per mile; $C = 2.5m + 3$; \$40.50

Scoring: 1 point per part.

Question 9 - Standard form [2 pts]

Multiply by 5: $5y = -3x + 20$. Add $3x$ to both sides.

$$3x+5y=20$$

Scoring: 1 point for clearing the fraction; 1 point for the standard form.

Total
20 points