

Grade 8 - Slope and Similar Triangles - Test Answer Key

Common Core 8.EE.B.6 · maths-pdf.fr/en/

Use this answer key to score the slope and $y = mx + b$ test out of 20 points. Each solution shows the full work and a scoring guide, so partial credit can be given fairly when a student shows correct steps but makes an arithmetic slip.

Grade 8 · Common Core State Standards: **8.EE.B.6**

Question 1 - Find the slope [2 pts]

a. $\frac{9-1}{6-2} = 2$

b. $\frac{-2-4}{3-(-3)} = -1$

Scoring: 1 point each.

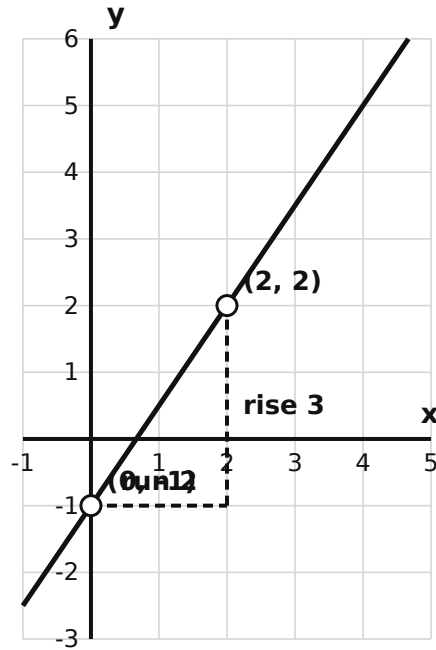
Question 2 - Read an equation [2 pts]

a. $m = \frac{2}{3}$, $b = -5$

b. $2y = -4x + 10$, so $y = -2x + 5$

Scoring: 1 point each part.

Question 3 - Equation from a graph [3 pts]



A line.

$$m = \frac{3}{2}, b = -1.$$

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

Scoring: 1 point for slope, 1 point for the intercept, 1 point for the equation.

Question 4 - Similar triangles [3 pts]

$$\frac{\text{rise}}{12} = \frac{3}{4}, \text{ so rise} = 9.$$

Both are right triangles with the same slope angle, so their angles match.

Scoring: 1 point for setting up the proportion, 1 point for 9, 1 point for the similarity reason.

Question 5 - Two points [3 pts]



Rise 6, run 2.

$$m = \frac{13-7}{4-2} = 3.$$

$$7 = 3 \cdot 2 + b, \text{ so } b = 1.$$

$$y = 3x + 1$$

Scoring: 1 point for the slope, 1 point for b , 1 point for the equation.

Question 6 - Parallel [2 pts]

Parallel lines have the same slope, -2 . The y-intercept is 9.

$$y = -2x + 9$$

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

Question 7 - Streaming [3 pts]

$$y = 9x + 6.$$

Slope 9: dollars per month. Intercept 6: the sign-up fee paid at the start.

Scoring: 1 point for the equation. 1 point for each meaning.

Question 8 - Explain [2 pts]

Triangles drawn between different pairs of points are similar, so rise to run is the same ratio each time.

Scoring: 1 point for similar triangles. 1 point for the proportional sides conclusion.

Total
20 points