

Writing Linear Equations and Scatter Plots: math test solutions, Grade 9 – download the PDF

Test solutions with the detailed point scale. Add up your points and spot what to review.

Suggested time: 45 minutes. Out of 20 points. Calculator allowed only when the problem says so.

1 Slope and a point

/ 3 pts

(a) $y - 3 = -4(x - 2)$ (0.5 pt), so $y = -4x + 11$ (1 pt).

(b) $y + 5 = 2(x + 1)$ (0.5 pt), so $y = 2x - 3$ (1 pt).

2 Two points

/ 3 pts

(a) $m = \frac{-1 - 7}{3 - (-1)} = -2$ (1 pt). $y - 7 = -2(x + 1)$, so $y = -2x + 5$ (1 pt).

(b) $-2x + 5 = 0$, so $x = 2.5$ (1 pt).

3 Modeling plant growth

/ 4 pts

- (a) The points rise: strong positive correlation (1 pt).
- (b) Predicted $2.2(3) + 1 = 7.6$; residual $8 - 7.6 = 0.4$ (1 pt).
- (c) The plant grows about 2.2 cm per day (1 pt).
- (d) $2.2(10) + 1 = 23$ cm (0.5 pt). Day 10 is outside the data (extrapolation), so growth may not stay linear (0.5 pt).

4 Correlation and prediction

/ 3 pts

- (a) No, correlation does not prove causation (1 pt).
- (b) Hot weather, which brings more swimmers and more cone sales (1 pt).
- (c) 80 °F is inside 60 to 95: interpolation (0.5 pt). 40 °F is outside: extrapolation (0.5 pt).

5 Delivery fee

/ 4 pts

- (a) $2 \leq 3$, so $D(2) = 5$ (0.5 pt).
- (b) $5 + 1.5(4) = 11$, so \$11 (1 pt).
- (c) $5 + 1.5x - 4.5 = 1.5x + 0.5$ (1 pt).
- (d) $1.5x + 0.5 = 14$, so $x = 9$ miles (1.5 pt).

6 An absolute value function

/ 3 pts

Vertex: $(-2, -4)$ (1 pt). y-intercept: $|2| - 4 = -2$ (1 pt). x-intercepts: $|x + 2| = 4$, so $x = 2$ or $x = -6$ (1 pt).



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6 random questions, instant feedback.



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