

Final Exam

Cumulative Review: Foundations through Quadratics & Statistics

Name: _____ Date: _____ Score: ____ / 16

INSTRUCTIONS

This final exam cumulatively covers Units 0 through 9 (Foundations through One-Variable Statistics). For multiple-choice questions, circle the letter of the correct answer. For short-answer and problem-solving questions, show your complete work in the space provided. No calculator unless your teacher says otherwise.

1**Unit 0 — Evaluate using the order of operations: $8 - 2 \times 3 + 5$**

Multiple Choice

A 7**B** 13**C** 3**D** 17**2****Unit 1 — Solve: $7x + 4 = 25$**

Multiple Choice

A $x = 3$ **B** $x = 4$ **C** $x = 29/7$ **D** $x = 21$ **3****Unit 1 — Short Answer: Solve: $2(x - 4) = 3x + 1$**

Short Answer

4**Unit 2 — Solve: $4x - 1 < 11$**

Multiple Choice

A $x < 3$ **B** $x > 3$ **C** $x < 2.5$ **D** $x < 12$ **5****Unit 3 — If $f(x) = 2x^2 - 3$, find $f(3)$.**

Multiple Choice

A 15**B** 9**C** 33**D** 12**6****Unit 3 — Short Answer: Find the slope of the line through $(-1, 4)$ and $(3, -8)$.**

Short Answer

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Unit 4 — Solve by elimination: $3x + 2y = 16$ and $x - 2y = 0$

Multiple Choice

A $x = 4, y = 2$

B $x = 2, y = 4$

C $x = 4, y = 4$

D $x = 8, y = 4$

8

Unit 4 — Short Answer: Solve by substitution: $y = x - 3$ and $4x + y = 17$

Short Answer

9

Unit 5 — Which ordered pair is a solution to the system $y \leq x + 2$ and $y > -x + 1$?

Multiple Choice

A $(2, 3)$

B $(2, 5)$

C $(-5, 10)$

D $(2, -5)$

10

Unit 6 — Simplify: $(2x^3)^4$

Multiple Choice

A $16x^{12}$

B $8x^7$

C $2x^{12}$

D $16x^7$

11

Unit 6 — Short Answer: Simplify the radical: $\sqrt{72}$

Short Answer

12

Unit 7 — Factor: $x^2 - 9x + 20$

Multiple Choice

A $(x - 5)(x - 4)$

B $(x - 10)(x + 2)$

C $(x + 5)(x + 4)$

D $(x - 20)(x - 1)$

13

Unit 7 — Short Answer: Multiply: $(x - 6)(x + 6)$

Short Answer

14

Unit 8 — Solve by factoring: $x^2 + x - 20 = 0$

Multiple Choice

A $x = -5$ or $x = 4$

B $x = 5$ or $x = -4$

C $x = -5$ or $x = -4$

D $x = 5$ or $x = 4$

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Unit 8 — Problem Solving: A ball's height is given by $h(t) = -16t^2 + 48t + 4$ (feet, t in seconds). Find the maximum height and the time at which it occurs.

Problem Solving

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Unit 9 — Problem Solving: A data set is 5, 9, 12, 15, 20, 40. Find the mean and the median, and state which measure better represents a "typical" value in this data set, given the outlier of 40. Justify your answer.

Problem Solving