

Name: _____ Date: _____ Score: ____ / 16

INSTRUCTIONS

This midterm covers Units 0 through 4 (Foundations, Linear Equations, Inequalities, Functions & Linear Equations, and Systems of Equations). 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: $4 + 3(6 - 2)^2 \div 6$**

Multiple Choice

A 12**B** 8**C** 20**D** 16**2****Unit 0 — Simplify: $x^4 \cdot x^2$**

Multiple Choice

A x^6 **B** x^8 **C** x^2 **D** $2x^6$ **3****Unit 0 — Short Answer: Write 0.0000723 in scientific notation.**

Short Answer

4**Unit 1 — Solve: $5x - 8 = 22$**

Multiple Choice

A $x = 6$ **B** $x = 3$ **C** $x = 30$ **D** $x = 14$ **5****Unit 1 — Solve: $3(x + 2) = 2x - 1$**

Multiple Choice

A $x = -7$ **B** $x = 7$ **C** $x = -5$ **D** $x = 5$ **6****Unit 1 — Short Answer: Solve the literal equation $P = 2l + 2w$ for w .**

Short Answer

7 Unit 2 — Solve: $-3x + 7 \geq -8$

Multiple Choice

A $x \leq 5$

B $x \geq 5$

C $x \leq -5$

D $x \geq -5$

8 Unit 2 — Solve: $|x + 2| = 9$

Multiple Choice

A $x = 7$ or $x = -11$

B $x = 7$ only

C $x = 11$ or $x = -7$

D No solution

9 Unit 2 — Short Answer: Solve the compound inequality: $-5 \leq 3x - 2 < 7$

Short Answer

10 Unit 3 — If $f(x) = 3x - 7$, find $f(-2)$.

Multiple Choice

A -13

B -1

C -4

D 13

11 Unit 3 — Find the slope of the line through $(1, -2)$ and $(5, 6)$.

Multiple Choice

A 2

B $1/2$

C 4

D 8

12 Unit 3 — Short Answer: Write the equation of the line through $(0, 4)$ with slope -3 .

Short Answer

13 Unit 4 — Solve by substitution: $y = 3x - 1$ and $2x + y = 9$

Multiple Choice

A $x = 2, y = 5$

B $x = 5, y = 2$

C $x = 1, y = 2$

D $x = 2, y = 1$

14 Unit 4 — Solve by elimination: $x + y = 10$ and $x - y = 2$

Multiple Choice

A $x = 6, y = 4$

B $x = 4, y = 6$

C $x = 5, y = 5$

D $x = 8, y = 2$

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Unit 4 — Problem Solving: The sum of two numbers is 50, and one number is 2 less than 3 times the other. Set up and solve a system of equations to find both numbers.

Problem Solving

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Unit 4 — Problem Solving: A school play sold 150 tickets — student tickets at \$4 and adult tickets at \$7 — for a total of \$840. Set up and solve a system of equations to find how many of each type of ticket were sold.

Problem Solving