

Name: _____ Date: _____ Score: ____ / 10

INSTRUCTIONS

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 Add: $(3x^2 + 2x - 5) + (x^2 - 4x + 7)$

Multiple Choice

☐ **A** $4x^2 + 2x + 2$

☐ **B** $4x^2 - 2x + 2$

☐ **C** $4x^2 - 2x - 2$

☐ **D** $2x^2 - 2x + 2$

2 Subtract: $(5x^2 - 3x + 1) - (2x^2 + 4x - 6)$

Multiple Choice

☐ **A** $3x^2 + 7x - 5$

☐ **B** $3x^2 - 7x + 7$

☐ **C** $7x^2 - 7x - 5$

☐ **D** $3x^2 - 7x - 5$

3 Short Answer — Multiply: $(x + 3)(x - 5)$

Short Answer

4 Multiply using a special product: $(x + 4)^2$

Multiple Choice

☐ **A** $x^2 + 16$

☐ **B** $x^2 + 4x + 16$

☐ **C** $x^2 + 8x + 16$

☐ **D** $x^2 + 8x + 8$

5 Multiply: $(2x - 3)(2x + 3)$

Multiple Choice

☐ **A** $4x^2 - 9$

☐ **B** $4x^2 + 9$

☐ **C** $4x^2 - 6x - 9$

☐ **D** $4x^2 - 12x - 9$

6 Short Answer — Factor out the GCF: $6x^3 - 9x^2 + 12x$

Short Answer

7 Factor the trinomial: $x^2 + 7x + 12$

Multiple Choice

☐ **A** $(x + 3)(x + 4)$

☐ **B** $(x + 2)(x + 6)$

☐ **C** $(x + 1)(x + 12)$

☐ **D** $(x - 3)(x - 4)$

8 Factor the trinomial: $x^2 - 2x - 15$

Multiple Choice

A $(x - 5)(x + 3)$

B $(x + 5)(x - 3)$

C $(x - 5)(x - 3)$

D $(x + 5)(x + 3)$

9 Problem Solving — Factor completely: $2x^2 + 11x + 12$

Problem Solving

10**Problem Solving — The area of a rectangle is $x^2 + 5x - 24$ square units. If the length is $(x + 8)$, find the width by factoring.**

Problem Solving