# UNIT 4 PRACTICE TEST: ALGEBRAIC EXPRESSIONS

**MFM2PI** **NAME: _____**

## SIMPLIFYING POLYNOMIAL EXPRESSIONS

1. Simplify each expression by adding/subtracting like terms.

a) $5 + 11x - 6 - 13x$

b) $-2x^2 + x - x^3 - 3x^2 + x^3 + 6x$

## MULTIPLYING BINOMIALS

2. Multiply each pair of binomials and simplify your answer.

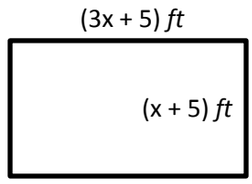
a) $(2x - 1)(3x + 4)$

b) $(x + 7)(2x - 2)$

c) $(x - 3)(x + 3)$

d) $(x - 1)^2$

3. Rebecca would like to paint a wall in her bedroom and needs to figure out how much paint to buy. The height and length of the wall can be represented by the following diagram.




a) Find an algebraic expression to represent the <u>area</u> of the wall.

b) Find the actual area if x = 3 *ft*.

c) Determine the cost if paint costs $ 0.75 / $ft^2$.

## COMMON FACTORING

5. Common factor.

a) $4x + 28$

b) $x^3 - x^2$

c) $3x + 9x^2$

d) $12a^2b - 6ab$

## FACTORING SIMPLE TRINOMIALS

6. Factor each trinomial.

a) $x^2 + 4x + 3$

b) $x^2 + 9x + 20$

c) $x^2 - 5x - 14$

d) $x^2 - 18x + 81$

7. A carpenter is installing a countertop with an area of $x^2 + 7x + 6$.

a) Write expressions for the length and width of the countertop.

b) What is the shape of the countertop?

c) Calculate the area of the countertop if x = 1 *ft*. Include units.

d) Determine the perimeter of the countertop. Include units.

## FACTORING A DIFFERENCE OF SQUARES

8. Factor each difference of squares.

a) $x^2 - 49$

b) $x^2 - 1$

c) $9x^2 - 25$

d) $169 - 121x^2$

## FACTORING COMPLETELY

9. Factor completely.

(Hint: Common factor first. Then, factor what's inside the bracket as either a simple trinomial or difference of squares.)

a) $8x^2 - 16x - 24$

b) $2x^2 - 288$

**ADDITIONAL PRACTICE**

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