Math 10 Foundations LG 3 Quiz B Answer Sheet

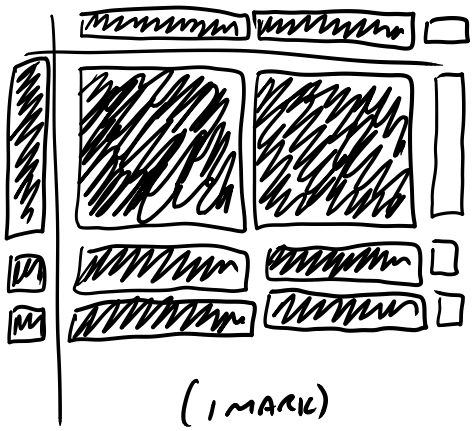
Instructions /20

1. Mark your quiz.
2. Complete the "How Did I Do?" sheet
3. Return this sheet to Mrs. Craig.

Bring your marked quiz and the "How Did I Do?" page to your teacher for a quick interview.

Expectation #1: Explain how multiplication of binomials is related to area and to the multiplication of two-digit numbers.

1. Show how you would multiply $(2x-1)(x+2)$ with algebra tiles. (2 marks)



(1 MARK)

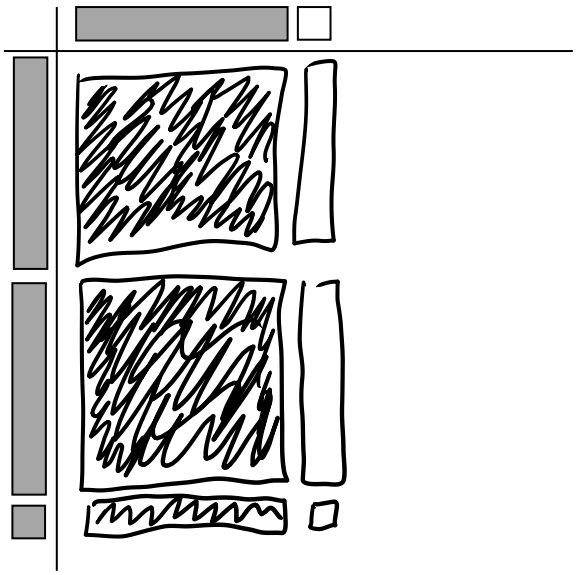
$(2x-1)(x+2)$

$= 2x^2 + 4x - x - 2$

$= 2x^2 + 3x - 2$ (1 MARK)

* NOTE: IT DOESN'T MATTER WHICH FACTOR IS ON THE TOP OR SIDE. YOU WILL STILL GET THE SAME ANSWER.

2. What are the dimensions of this algebra tile model and what product does the algebra tile model show? (2 marks)



DIMENSIONS $(x-1)$ & $(2x+1)$

PRODUCT: $2x^2 - x - 1$

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Expectation #2: Multiply polynomials.

3. Multiply using the distributive property. Combine like terms where possible. (2 marks each)

a) $(x+2)(x+3)$

$= x^2 + 3x + 2x + 6$

$= x^2 + 5x + 6$

b) $(x-3)^2$

$= (x-3)(x-3)$

$= x^2 - 3x - 3x + 9$

$= x^2 - 6x + 9$

c) $(4x+3)(x-7)$

$= 4x^2 - 28x + 3x - 21$

$= 4x^2 - 25x - 21$

d) $(2m-k)(5m-9k)$

$= 10m^2 - 18mk - 5mk + 9k^2$

$= 10m^2 - 23mk + 9k^2$

e) $(3x+7)(5x^3-x^2-3)$

$= 15x^4 - 3x^3 - 9x + 35x^3 - 7x^2 - 21$

$= 15x^4 + 32x^3 - 7x^2 - 9x - 21$

f) $(x-3)(2x-5)-(2x+3)^2$

$= (2x^2 - 5x - 6x + 15) - (2x+3)(2x+3)$

$= (2x^2 - 11x + 15) - (4x^2 + 6x + 6x + 9)$

$= (2x^2 - 11x + 15) - (4x^2 + 12x + 9)$

$= 2x^2 - 11x + 15 - 4x^2 - 12x - 9$

$= -2x^2 - 23x + 6$

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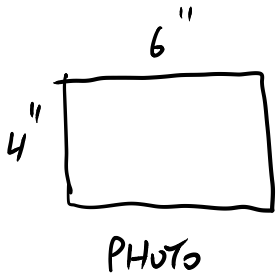
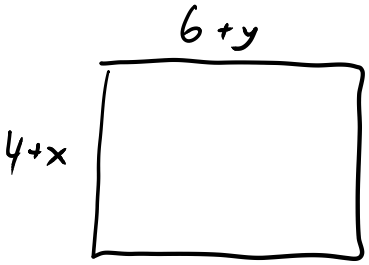
4. A photograph with a length 4 inches and a width of 6 inches is put into a frame. The frame adds an extra x inches to the length and an extra y inches to the width. Write an expression for the combined area of the picture and frame. Multiply and then determine the area if $x = 2$ inches and $y = 1$ inch. (2 marks)





AREA $= (4+x)(6+y)$

$= 24 + 4y + 6x + xy$

If $x=2$ & $y=1$

AREA $= 24 + 4(1) + 6(2) + 2(1)$

$= 24 + 4 + 12 + 2$

$= 42$ square inches

* DON'T FORGET UNITS!!

5. Pam multiplied the expression $(3x + 2y)(7x - 2y)$. When she checked her answer, she found that she had made a mistake.

$$(3x + 2y)(7x - 2y) = 3x(7x - 2y) + 2y(7x - 2y) \quad \checkmark$$
$$= 21x^2 - 6xy + 14xy - 4y^2 \quad \checkmark$$
$$= 15x^2 + 8x^2y^2 - 4y^2$$

SHOULD NOT BE SQUARE UNITS

Indicate where Pam made her mistake and complete the correction for her. (2 marks)

$(3x+2y)(7x-2y) = 21x^2 - 6xy + 14xy - 4y^2$

$= 21x^2 + 8xy - 4y^2$

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