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UNIT 4: POLYNOMIALS

SECTION 5.6: MULTIPLYING AND DIVIDING A POLYNOMIAL BY A MONOMIAL

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MATH 9

WHAT'S THE POINT OF TODAY'S LESSON?

We will continue working on the Math 9 Specific Curriculum Outcome (SCO) "Patterns and Relations 7" OR PR7 which states:

PR7:   "Model, record and explain the operations of multiplication and division of polynomial expressions (limited to polynomials of degree less than or equal to 2) by monomials concretely, pictorially and symbolically."

What does THAT mean???

SCO PR7 means that we will multiply and divide polynomials with one or more terms by monomials (expressions containing only one term). We will do this with pictures (algebra tiles) and without. The largest exponent allowed is 2.

OPTIONAL BONUS QUESTION?
(page 248, #24)

WARM-UP: Multiply or divide as indicated.

1. $-5(2y^2 - 7y - 9)$ **2.** $\dfrac{24x^2 + 28y^2 - 8xy + 4}{-4}$

$$= -10y^2 + 35y + 45$$ $$= -6x^2 - 7y^2 + 2xy - 1$$

HOMEWORK QUESTIONS???
(pgs 246/7/8, #8ab, 14, 16, 18a, 20 and 23)

16. f) $\dfrac{30 - 36d^2 + 18d}{-6}$

$= -5 + 6d^2 - 3d$

$= 6d^2 - 3d - 5$

g) $\dfrac{-26c^2 + 39c - 13}{-13}$

$= 2c^2 - 3c + 1$

HOMEWORK QUESTIONS???
(pgs 246/7/8, #8ab, 14, 16, 18a, 20 and 23)

20. a) $\dfrac{15a^2 + 21a + 6}{3}$

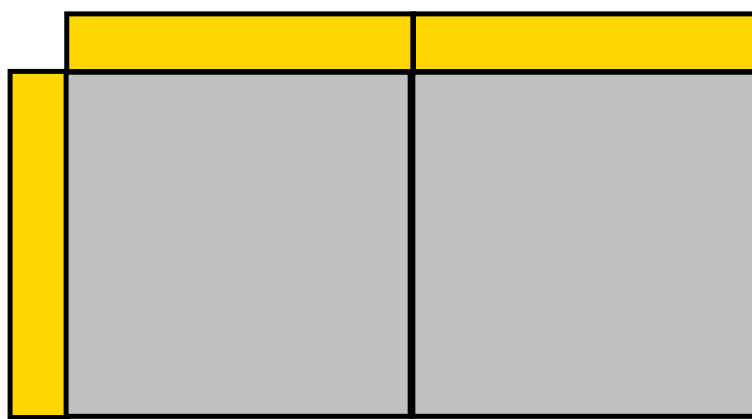$= 5a^2 + 7a + 2$

b) $a = 4\,cm$

$5a^2 + 7a + 2$

$= 5(4^2) + 7(4) + 2$

$= 5(16) + 28 + 2$

$= 80 + 28 + 2$

$= 110\,cm$

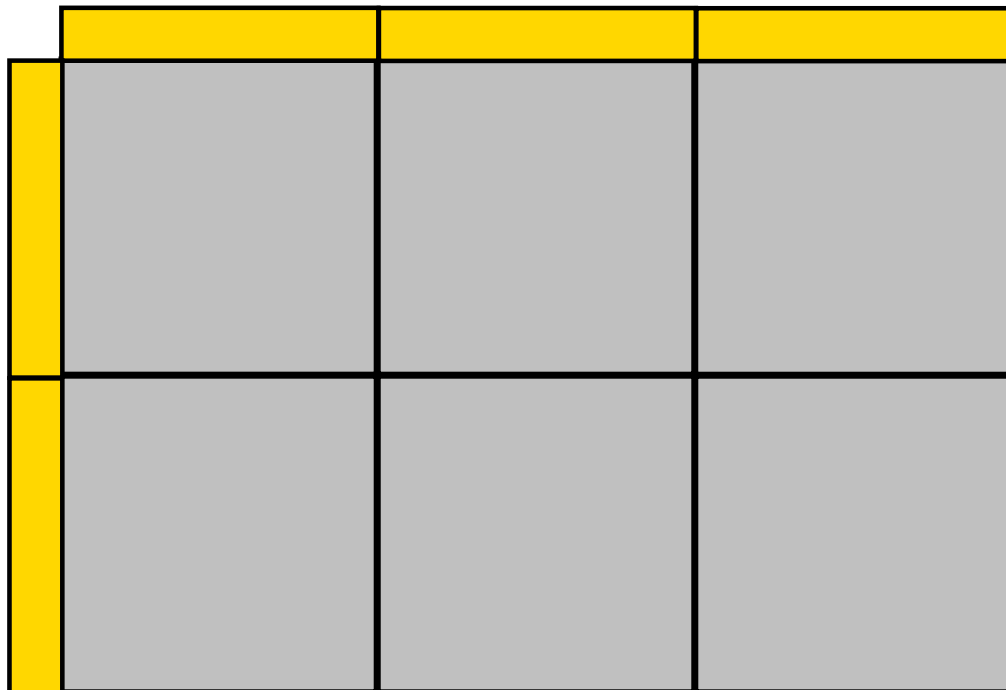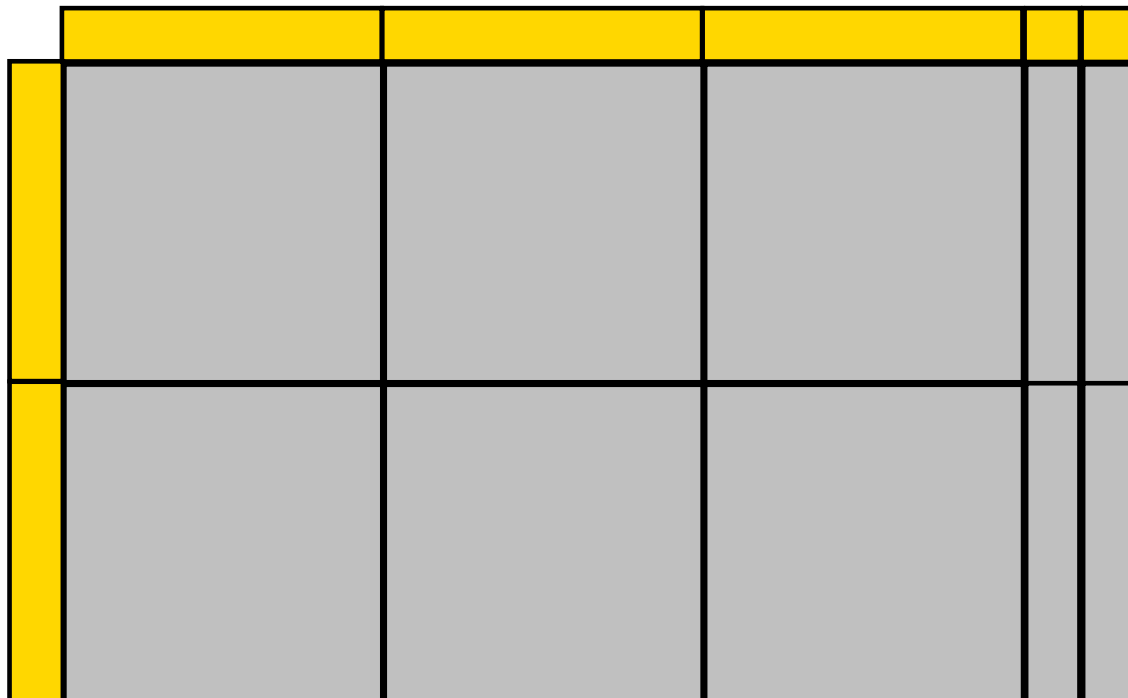# MULTIPLYING POLYNOMIALS BY MONOMIALS USING ALGEBRA TILES:

EX 1:   **x(2x)**

So...   x(2x)

= 2x²

MULTIPLYING POLYNOMIALS BY MONOMIALS USING ALGEBRA TILES:

EX 2:   2x(3x)

So...   2x(3x)
          = $6x^2$

MULTIPLYING POLYNOMIALS BY MONOMIALS USING ALGEBRA TILES:

EX 3: $2m(3m + 2)$

So... $2m(3m + 2)$

          $= 6m^2 + 4m$

TO MULTIPLY A POLYNOMIAL BY A MONOMIAL:

Using the distributive property, multiply the monomial outside the brackets by each term inside the brackets. Multiply the coefficient outside the brackets by the coefficient(s) and/or constant inside the brackets, and add the exponents of common variables (see page 86, "Product of Powers").

EX: $x(2x)$
    $= 1x(2x)$
    $= (1)(2)(x)(x)$
    $= 2x^2$

EX: $2x(3x)$
    $= (2)(3)(x)(x)$
    $= 6x^2$

EX: $2m(3m + 2)$
    $= (2m)(3m) + (2m)(2)$
    $= (2)(3)(m)(m) + (2)(2)(m)$
    $= 6m^2 + 4m$

$a(b)$
$= ab$

EX: $-4p(-5p + 6q - 7)$
    $= 20p^2 - 24pq + 28p$

CONCEPT REINFORCEMENT:

MMS9
Page 255:   **#6 and #9ab**
Page 256:   **#12 and #14**
Page 257:   **#19, #20, #22 and #24**