Chapter #7

7.1 Multiplying & Dividing Monomials

- A monomial has only 1 term
    ex 5, 2x, 3S²

MULTIPLICATION

METHOD 1

1 Multiply the numerical coefficients
2 Multiply the variables (add exponents)

Ex #1

a) $(3a)(4b^3)$
   $= \boxed{12ab^3}$

b) $-x^2(2xy)$
   $= \boxed{-2x^3y}$

c) $-2y^3(4y^2)$
   $= \boxed{-8y^5}$

d) $(2x^2y)(-3xy)$
   $= \boxed{-6x^3y^2}$

e) $(x^3)(-3xy^3)(4y)$
   $= \boxed{-12x^4y^4}$

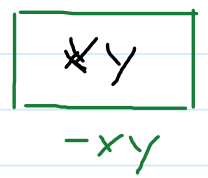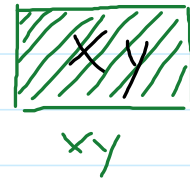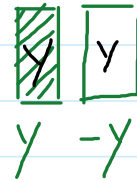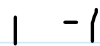f) $(-2a^3bc^2)(-5ac^4y^2)$

   $= 10a^4bc^6y^2$
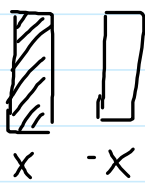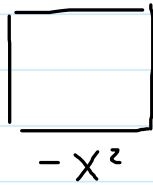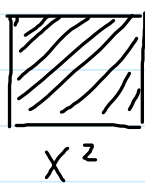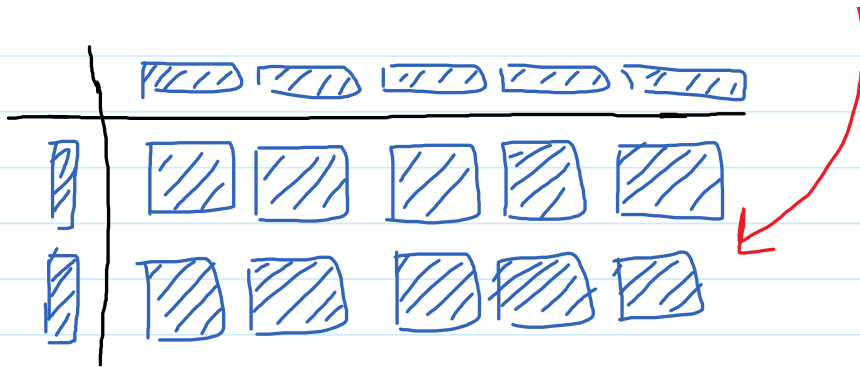
g) $\left(\dfrac{4}{6}x\right)(3x)$

   $= \dfrac{12x^2}{6} = \boxed{2x^2}$

METHOD 2   Use a model
(Algebra Tiles)

Ex #3

$(5x)(2x) = 10x^2$

x^2 $-x^2$ x $-x$ 1 -1 y $-y$

xy $-xy$

Ex #4

$$(3x)(2y) = \boxed{6xy}$$

$(3x)$

$(2y)$
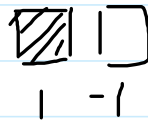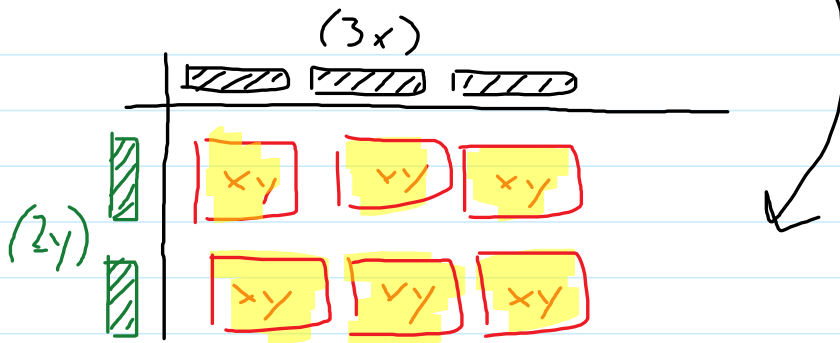
DIVISION

METHOD I

1. divide numerical coefficients
2. divide like variables (subtract exponents)

Ex #5

a) $\dfrac{8x^2}{2x} = \boxed{4x}$ b) $16y - 4y$ c) $\dfrac{-12abc}{-2bc}$
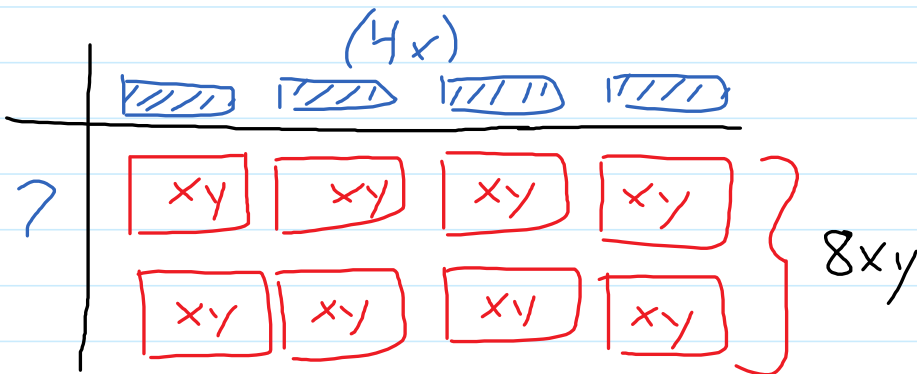
$= \boxed{4}$

d) $18x^5y^2 - (-6x^2y)$

$= \boxed{-3x^3y}$

e) $\dfrac{10m^8n^5}{5m^3n^2}$

$= \boxed{2m^5n^3}$

METHOD 2 Use a model
(Algebra Tiles)

Ex #6

$\dfrac{8\cancel{xy}}{4\cancel{x}} = \boxed{2y}$

$(4x)$

$8xy$

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