U4L1 Rational Expressions Multiplying and Dividing

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Q What is a rational number?
is a number that can be written as a fraction $\dfrac{A}{B}$ ← cannot be zero (ERROR on calc)

Q What is a rational expression?
is an expression that can be written as a quotient of two polynomials
$\left(\text{eg. } \dfrac{A}{2}, \dfrac{4}{r}, \dfrac{X}{X-2} \right)$

Q What is a restriction?
Since division by zero results in ERROR (is not defined), <u>restrictions must</u> be placed
$\left(\text{eg } \dfrac{A}{2}, \dfrac{4}{r}, \dfrac{X}{X-2} \right)$

$\downarrow$ $\downarrow$ $\downarrow$

no restrictions $r \neq 0$ $X \neq 2$ b/c those values would make denominator zero 😀

Ⓐ Mult & Div. Expressions

Divide Fractions : KEEP FLIP FLIP

i) $\dfrac{3x^2 y^1}{4x^1} \cdot \dfrac{2x^1 y^3}{5y^1}$

reduce
$= \dfrac{6x^3 y^4}{20 x^1 y^1}$ ÷2 ÷2

$= \boxed{\dfrac{3}{10} x^2 y^3 \text{ OR } \dfrac{3}{10} x^2 y^3}$ ✓

restrictions : NONE

ii) $\dfrac{-8x^5 y^8}{4x^3 y^5}$

$= \dfrac{-2 x^2 y^3}{1}$

$= \boxed{-2x^2 y^3}$ ✓

NONE

iii) $\dfrac{3x^2 y}{4} \div \dfrac{2x}{5}$

$= \dfrac{3x^2 y}{4} \cdot \dfrac{5}{2x}$

$= \dfrac{15x^2 y^1}{8x^1}$

$= \dfrac{15 x^1 y^1}{...}$ NONE

restrictions : NONE !   NONE ! $= \dfrac{15 x^{1} y^{1}}{8}$ NONE !

Assignment U4L1 wkst #7-26