

**GO OVER  
HOMEWORK**



① Zero Exponents + ② Negative Exponents

$3^3$	27
$3^2$	9
$3^1$	3
$3^0$	1
$3^{-1}$	$\frac{1}{3}$
$3^{-2}$	$\frac{1}{9}$
$3^{-3}$	$\frac{1}{27}$

$x^3$	$x^3$
$x^2$	$x^2$
$x^1$	$x$
$x^0$	1
$x^{-1}$	$\frac{1}{x}$
$x^{-2}$	$\frac{1}{x^2}$
$x^{-3}$	$\frac{1}{x^3}$



- Simplify using the zero & negative exponent properties.

1.  $\frac{10s^{-3}}{5t^{-5}}$

$$\frac{2t^5}{1s^3}$$

2.  $\frac{4fg^{-3}}{16x^{-5}}$

$$\frac{fx^5}{4g^3}$$

3.  $\frac{2x^{-3}y^{-2}}{16w^0z^{-3}}$

$$\frac{z^3}{8x^3y^2}$$



$$\cancel{e^0} w^1 u^{-2} h^3 p^{-5} t^6 s^7$$

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$$\frac{w^1 h^3 a^{-4} t^6 s^7}{u^2 p^5} ?$$



### ③ Multiplication

$$X^2 \cdot X^4$$

$$X X X X X X$$

$$X^6$$

### ④ Division

$$\frac{X^4}{X^2} = \frac{\cancel{X X X X}}{\cancel{X X}} = X^2$$

$$X^2$$



$$\frac{X^2}{X^4} = \frac{\cancel{X} \cancel{X}}{\cancel{X} \cancel{X} \cancel{X} \cancel{X}}$$

$$\frac{1}{X^2}$$



Simplify:

①  $(x^2 y^3) \cdot (2x^2 y) \cdot (3xy^5)$

$6x^5 y^9$

②  $\frac{1xy^2}{25xy^3}$

$\frac{1}{25y}$

③  $\frac{36x^5 y^2 x^2}{42y^3 y^4}$

$\frac{6x^7}{7y^5}$



$$\frac{32x^2x^5y^5}{64y^3y^{10}}$$

$$\frac{1x^7y^5}{2y^{13}}$$

$$= \frac{x^7}{2y^8}$$





# ⑤ Power to a Power

$$(2y)^4$$

$$(2y)(2y)(2y)(2y)$$

$$16y^4$$



①

$$(-2y)^4$$

$$16y^4$$

②

$$-(2y)^4$$

$$-1 \cdot (2y)^4$$

$$-16y^4$$

③

$$(3xy^2)^3$$

$$(3xy^2)(3xy^2)(3xy^2)$$

$$27x^3y^6$$



# Extra Practice



$$(x^4 y^2 z)^5$$



$$(-3)^3 x^2 x^4$$



$$-2^2 x^2 y^5 y^3$$



$$\frac{25a^3b}{5ab^3}$$

$$5a^2$$

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$$b^2$$



$$3 \cdot 4^{-2}$$
$$\frac{1}{1} \cdot \frac{1}{16}$$

$$\frac{3}{16}$$





$$\frac{2(x^3)^{-5}(x^2)^2}{2x^{-4}}$$

~~$2x^{-15}x^4$~~

~~$2x^{-4}$~~

$x^4$

$$\frac{x^4 x^4}{x^{15}} = \frac{x^8}{x^{15}} =$$

$$\frac{1}{x^7}$$



$$\frac{2x^{-15}x^4}{2x^{-4}}$$

$$\frac{\cancel{2}x^{-11}}{\cancel{2}x^{-4}}$$

$$\frac{x^4}{x^{11}}$$

$$= \frac{1}{x^7}$$



$$(x^2 y^3)^2 (x^3 y^2)^{-2}$$

$$x^4 y^6 x^{-6} y^{-4} \rightarrow x^{-2} y^2$$

$$\frac{x^4 y^6}{x^6 y^4} = \frac{y^2}{x^2}$$

$$\frac{y^2}{x^2}$$



$$2a^2b^3(a^3b^2)^{-2}$$

$$\frac{4a^0b^0b^3}{1}$$

$$2a^2b^3a^{-6}b^{-4}$$

$$\frac{2b^3}{1}$$

$$2a^4b^4$$



**COME UP WITH ONE  
FOR YOUR PARTNER  
TO SOLVE!**



**HOMework**

**Worksheet**

