Name: _____ **Date:** _____ **HW # 5 Negative exponents**

Simplify. Your answer should contain only positive exponents.

ALL work to simplify is on following pages below.

1) $2m^2 \cdot 2m^3$

$4m^5$

2) $m^4 \cdot 2m^{-3}$

$2m$

3) $4r^{-3} \cdot 2r^2$

$\frac{8}{r}$

4) $4n^4 \cdot 2n^{-3}$

$8n$

5) $\frac{10x^2}{4x^{-3}}$

$\frac{5x^5}{2}$

6) $2x^3y^{-3} \cdot 2x^{-1}y^3$

$4x^2$

7) $\frac{2x^{-3}y}{6y^4}$

$\frac{1}{3x^3y^3}$

8) $\frac{2x^{-3}y^2}{2^4x^{-3}y^2}$

$\frac{1}{8}$

9) $4a^3b^2 \cdot 3a^{-4}b^{-3}$

$\frac{12}{ab}$

10) $x^2y^{-4} \cdot x^3y^2$

$\frac{x^5}{y^2}$

11) $(x^2)^0$

1

12) $(4r^0)^4$

256

13) $\frac{r^2}{2r^3}$

$\frac{1}{2r}$

14) $\frac{x^{-1}}{4x^4}$

$\frac{1}{4x^5}$

15) $\frac{3n^4}{3n^3}$

n

16) $\frac{m^4}{2m^4}$

$\frac{1}{2}$

17) $\frac{3m^{-4}}{m^3}$

$\frac{3}{m^7}$

18) $\frac{2x^4y^{-4}z^{-3}}{3x^2y^{-3}z^4}$

$\frac{2x^2}{3yz^7}$

① $2 \cdot 2 \cdot m^{2+3}$

$4m^5$

② $2m^{4+-3}$

$2m^1$

$2m$

③ $4 \cdot 2 \cdot r^{-3+2}$

$8r^{-1}$

$\frac{8}{r^1} = \frac{8}{r}$

④ $4 \cdot 2 \cdot n^{4+-3}$

$8n^1$

$8n$

⑤ $\frac{10x^2}{4x^{-3}}$

$\frac{10}{4} \cdot x^{2--3}$

$\frac{5}{2} \cdot x^5$

⑥ $2 \cdot 2 \cdot x^{3+-1} y^{-3+3}$

$4x^2 y^0$

$4x^2 \cdot 1$

$4x^2$

⑦ $\frac{2}{6} \cdot x^{-3} \cdot y^{1-4}$

$\frac{1}{3} \cdot x^{-3} y^{-3}$

$\frac{1}{3x^3 y^3}$

⑧ $2^{1-4} x^{-3--3} y^{2-2}$

$2^{-3} x^0 y^0$

$2^{-3} \cdot 1 \cdot 1$

2^{-3}

$\frac{1}{2^3} = \frac{1}{8}$

⑨ $4 \cdot 3 \cdot a^{3+-4} b^{2+-3}$

$12a^{-1} b^{-1}$

$\frac{12}{a^1 b^1} = \frac{12}{ab}$

⑩ $x^{2+3} y^{-4+2}$

$x^5 y^{-2}$

$\frac{x^5}{y^2}$

⑪ $(x^2)^0$

Base to the

1

(12) $(4r^0)^4$

$(4 \cdot 1)^4$

$(4)^4 = 256$

(13) $\frac{1}{2} r^{2-3}$

$\frac{1}{2} r^{-1}$

$\frac{1}{2r^1} = \frac{1}{2r}$

(14) $\frac{1}{4} x^{-1-4}$

$\frac{1}{4} x^{-5}$

$\frac{1}{4x^5}$

(15) $\frac{3}{3} n^{4-3}$

$1n^1$

n

(16) $\frac{1}{2} m^{4-4}$

$\frac{1}{2} m^0$

$\frac{1}{2} \cdot 1$

$\frac{1}{2}$

(17) $3m^{-4-3}$

$3m^{-7}$

$\frac{3}{m^7}$

(18) $\frac{2}{3} \cdot x^{4-2} y^{-4--3} z^{-3-4}$

$\frac{2}{3} x^2 y^{-1} z^{-7}$

$\frac{2x^2}{3y^1 z^7}$

$\frac{2x^2}{3yz^7}$