

Unit 6. Day 5 Homework
ZERO & NEGATIVE EXPONENTS

Directions: Simplify the expression. Write your answer using only positive exponents.

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

2) $2y^{-3} = \frac{2}{y^3}$

3) $\frac{g^{-3}}{g^4} = \frac{1}{g^4 - -3} = \frac{1}{g^7}$

4) $(hg^3)^{-2} = h^{-2}g^{-6}$
 $= \frac{1}{h^2g^6}$

5) $x^2y^{-3} = \frac{x^2}{y^3}$

6) $\frac{5n^{-4}}{n^{-3}} = \frac{5}{n^{-3} - -4} = \frac{5}{n}$

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

8) $(-15fg^2)^0 = 1$

9) $\frac{r^0}{s^{-4}} = \frac{1}{s^{-4}} = s^4$

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1) x^{-4}

2) $2y^{-3}$

3) $\frac{g^{-3}}{g^4}$

4) $(hg^3)^{-2}$

5) x^2y^{-3}

6) $\frac{5n^{-4}}{n^{-3}}$

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

8) $(-15fg^2)^0$

9) $\frac{r^0}{s^{-4}}$

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

$$11) \frac{2x^4y^{-10}}{8x^{-2}y^{-6}} = \frac{x^{4-(-2)}}{4y^{-6-(-10)}} = \frac{x^6}{4y^4}$$

12) Which expression simplifies to $2x^4$? **D!**

a) $2x^{-4}$
 \downarrow
 $\frac{2}{x^4}$

b) $\frac{32}{(2x)^4}$
 $\frac{32}{2^{-4}x^{-4}}$
 $32 \cdot 2^4 x^4$
 $32 \cdot 16 x^4$
 $512 x^4$

c) $\frac{1}{2x^{-4}} = \frac{x^4}{2}$

d) $\frac{8}{4x^{-4}} = \frac{2}{x^{-4}} = 2x^4$

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

$$11) \frac{2x^4y^{-10}}{8x^{-2}y^{-6}}$$

12) Which expression simplifies to $2x^4$?

a) $2x^{-4}$

b) $\frac{32}{(2x)^4}$

c) $\frac{1}{2x^{-4}}$

d) $\frac{8}{4x^{-4}}$