

Review: Unit 8

I. Simplify using only positive exponents.

Try the following INDEPENDENTLY—test yourself!

1. $x^3y^{-3}z^4$

$$\frac{x^3z^4}{y^3}$$

2. $\frac{r^{-2}s^6}{r^3s^5}$

$$\frac{s}{r^5}$$

3. $2a^{-2}(ab^0)^3$

$$2a$$

4. $\left(\frac{2}{3}\right)^{-2}$

$$\frac{9}{4}$$

5. $(6m^0)(3^{-1}m^2n^{-4})$

$$\frac{2m^2}{n^4}$$

6. $\frac{3r^3s^{-5}t}{2r^{-3}s^{-5}t^4}$

$$\frac{3r^6}{2t^3}$$

7. $a^4b^{-7}c^0$

$$\frac{a^4}{b^7}$$

8. $(x^3y^{-4})^{-2}(x^{-5}y^6)^3$

$$\frac{y^{26}}{x^{21}}$$

9. $\frac{p^3q^{-1}}{q^2r^{-6}}$

$$\frac{p^3r^6}{q^3}$$

10. $(m^3n^{-5}m^{-1})^{-3}$

$$\frac{n^{15}}{m^6}$$

11. $\left(\frac{x^4y^{-2}}{x^{-3}y^5}\right)^{-1}$

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

12. $u^{-5}v^4(-u^3v^{-2})^3$

$$\frac{-u^4}{v^2}$$

13. $(2x^6y^{-2})(4x^{-3}y)^2$

$$32$$

14. $(9x)(3xy^0)^{-1}$

$$3$$

~Go over 1-14 together!

Rework the ones you missed!

II. Try the next set with a partner!

1. $(5x)^{-2}$

$$\frac{1}{25x^2}$$

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

$$8x^3y^9$$

3. $\frac{18x^5}{24x^2}$

$$\frac{3x^3}{4}$$

4. $(2x^3)(4xy^2)$

$$8x^4y^2$$

5. $\frac{(5x^2y^0)^2}{(3x)^{-2}(x^3y)}$

$$\frac{225x^3}{y}$$

6. $(4x^{-2}y^3)(2xy^2)^{-3}$

$$\frac{1}{2x^5y^3}$$

7. $-3m^{-4}n \cdot 2mn^2$

$$\frac{-6n^3}{m^3}$$

8. $\left(\frac{2x}{y^2}\right)^{-2}$

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

How did you do???

III: Rewrite the following as exponents or radicals (whatever form it is in-write it as the opposite!)

Remember:

9. $m^{\frac{3}{4}}$

$$\sqrt[4]{m^3}$$

10. $x^{\frac{1}{3}}$

$$\sqrt[3]{x}$$

11. $\sqrt{y^5}$

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

12. $(\sqrt[3]{h})^2$

$$h^{\frac{2}{3}}$$

STOP—take out 2 scrap sheets of paper. On one sheet make up 4 problems similar to the ones above and write your name on the paper. On the other sheet write the answers to your problems (keep this sheet on your desk. SNOWBALL ☺ Grab a snowball and work out the problems, then find that person and check your answers!

IV. Rewrite the following as exponents and then simplify.

13. $\sqrt[3]{27x^6}$

$3x^2$

14. $\sqrt{m^2n^8}$

mn^4

15. $\sqrt[4]{81b^8}$

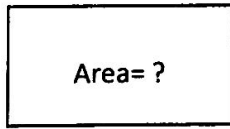
$3b^2$

16. $\sqrt{4x^2y^6}$
 $4^{\frac{1}{2}} x^{\frac{2}{2}} y^{\frac{6}{2}}$

$2xy^3$

V. Exponents and Geometry

17)



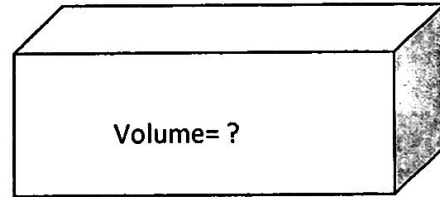
$4x^2y^{-2}z^3$

$6x^2y^{-3}z^4$

$\frac{24x^4z^7}{y^5}$

Area formula:

18)



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

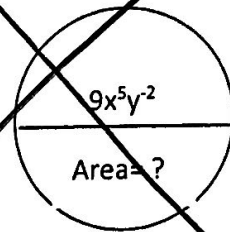
$6a^2b^{-2}$

$-3a^2b^{-5}$

$\frac{36a^2}{b^3}$

Volume formula:

19)



$9x^5y^2$

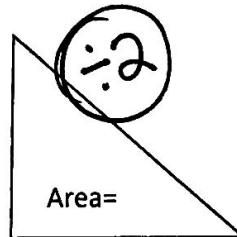
Area=?

Area formula:

πr^2

$\frac{63.585x^{10}}{y^4}$

20)



$4x^3y^9$

Area=

$3x^{-1}y^8$

$6x^2y^{17}$

Area formula: