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Algebra II



## Negative Exponents

Reduce each of the following and express with positive exponents

1.  $\frac{14x^{-2}y^3}{-8x^{-5}y^5}$

2.  $\frac{x^2y^{-3}}{x^{-3}y^{-2}}$

3.  $(3y)^2 (3zy^4)^{-2}$

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

5. Which expression is equivalent to  $x^{-1} \cdot y^2$ ?

1)  $xy^2$       3)  $\frac{x}{y^2}$

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

6. Which expression is equivalent to  $\frac{x^{-1}y^4}{3x^{-5}y^{-1}}$ ?

1)  $\frac{x^4y^5}{3}$       3)  $3x^4y^5$

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

7. The expression  $\frac{a^2b^{-3}}{a^{-4}b^2}$  is equivalent to

1)  $\frac{a^6}{b^5}$       3)  $\frac{a^2}{b}$

2)  $\frac{b^5}{a^6}$       4)  $a^{-2}b^{-1}$

**Simplify the following expressions**

$$8. \frac{2x^{-2}y^{-2}}{4y^{-5}}$$

$$9. (5^{-2}a^3b^{-4})^{-1}$$

$$10. \frac{(3x^{-2}y^2)^2}{9x^{-3}y^{-3}}$$

$$11. \frac{3x^{-4}y^5}{(2x^3y^{-7})^{-2}}$$

$$12. \frac{(4x^{-2})^{-2}}{(2x^2)(2y)^{-3}}$$

$$13. \frac{(2x^{-3})^{-3}}{16(x^2y^{-1})^{-2}}$$

$$14. \frac{(2xy^2)^{-2}}{(8x^{-2}y)^{-1}(2y^2)^{-2}}$$

$$15. \frac{(3x^2y^{-2})^2}{(2x^2y^{-1})^2(3x^{-5})}$$