

Worksheet #4- Simplifying Algebraic Expressions

Simplify using the exponent laws, and then express your final answer with only positive exponents, if applicable.

1. $5n^{-3} \cdot n^2$

2. $2n^4 \cdot 9n$

3. $-3n^2(8n^{-5})$

4. $(-15n^{-8})(-n^8)$

5. $(9x^7) \div (3x^2)$

6. $\frac{-30x^3}{5x^5}$

7. $(40x^7) \div (8x^{-1})$

8. $\frac{-2x^{-5}}{-6x^{-2}}$

9. $(15a^4b^5) \div (5a^{-2}b^7)$

10. $(4ab^7)(-3a^4b^{-3})$

11. $(5a^6b)(2b^3)(3a^{-2}b^{-9})$

12. $\frac{(12a^2b^5)(-5ab^{-3})}{15a^3b^2}$

Do on lined paper.

13. $\left(\frac{1}{2}a^2b\right)^{-3}$

14. $(3x^{-5})^{-1}(3x^{-2})^3$

15. $(4xy)^2(4xy^2)^{-1}$

16. $(xy)^{-3}(-x^7y^2)(6x^2)$

17. $\left(\frac{-2xy^3}{xy}\right)^5$

18. $\left(\frac{4x^3y^2}{3xy^6}\right)^{-3}$

19. $[(2x^{-7}y)(3x^{-2}y^5)]^{-1}$

20. $\frac{(x^6y^{-5})(x^{-2}y^2)^3}{(xy^2)^{-1}}$

Answers (Not in Order)

$$5x^8, 15, 18n^5, -12a^5b^4, 4x, \frac{-6x^6}{y}, -\frac{24}{n^3}, \frac{30a^4}{b^5}, -4, 3x^5, \frac{8}{a^6b^3}, \frac{5}{n}, \frac{3a^6}{b^2}, -\frac{6}{x^2}, -32y^{10}, \frac{1}{3x^3}, \frac{27y^{12}}{64x^6}, \frac{9}{x}, xy^3, \frac{x^9}{6y^6}$$