

Name \_\_\_\_\_

## Exponents – Mixed Practice Worksheet 1

Simplify the expression. Do not leave any negative exponents in your final answer.

1.  $x^4 \cdot x^7$

2.  $2x^6 \cdot x^{11}$

3.  $\frac{5^{14}}{5^8}$

4.  $(5p^4)^3$

5.  $(3x^9y^3)^2$

6.  $(2m)^{-4}$

7.  $a^{-5} \cdot a^{-11}$

8.  $\frac{25x^9}{5x^{12}}$

9.  $(156u^{24}w^4)^0$

10.  $(5x^5y^4)^2$

11.  $(-a^3b^5)^7$

12.  $(2x^5y)(3x^4y^7)$

13.  $(2y^4)^3(5y^6)^2$

14.  $\left(\frac{10x^9}{x^{18}}\right)^{-5}$

15.  $\left(\frac{50x^6}{2x^3}\right)^2$

16.  $(8k^2j^{12})^2(4k^{-4}j^3)$

17.  $\frac{a^5b^2}{4b} \cdot \frac{16a^9b^4}{a^3b^7}$

18.  $\frac{9x^7y^3}{xy} \cdot \frac{2x^6y^8}{3x^3y^4}$

19.  $(3a^2b^6)^2(3a^{10}b^4)^3$

20.  $\left(\frac{5a^{10}b^5c^{22}}{15a^{-2}b^{14}c^{11}}\right)^3$

## Exponents - Mixed Practice Worksheet 1 Answers

Simplify the expression. Do not leave any negative exponents in your final answer.

1.  $x^4 \cdot x^7 = x^{11}$

2.  $2x^6 \cdot x^{11} = 2x^{17}$

3.  $\frac{5^{14}}{5^8} = 5^6$

4.  $(5p^4)^3 = 125p^{12}$

5.  $(3x^9y^3)^2 = 9x^{18}y^6$

6.  $(2m)^{-4} = \frac{1}{16m^4}$

7.  $a^{-5} \cdot a^{-11} = \frac{1}{a^{16}}$

8.  $\frac{25x^9}{5x^{12}} = \frac{5}{x^3}$

9.  $(156u^{24}w^4)^0 = 1$

10.  $(5x^5y^4)^2 = 25x^{10}y^8$

11.  $(-a^3b^5)^7 = -a^{21}b^{35}$

12.  $(2x^5y)(3x^4y^7) = 6x^9y^8$

13.  $(2y^4)^3(5y^6)^2 = 200y^{24}$

14.  $\left(\frac{10x^9}{x^{18}}\right)^{-5} = \frac{1}{100,000x^{45}}$

15.  $\left(\frac{50x^6}{2x^3}\right)^2 = 625x^6$

16.  $(8k^2j^{12})^2(4k^{-4}j^3) = 256j^{27}$

17.  $\frac{a^5b^2}{4b} \cdot \frac{16a^9b^4}{a^3b^7} = \frac{4a^{11}}{b^2}$

18.  $\frac{9x^7y^3}{xy} \cdot \frac{2x^6y^8}{3x^3y^4} = 6x^9y^6$

19.  $(3a^2b^6)^2(3a^{10}b^4)^3 = 243a^{34}b^{24}$

20.  $\left(\frac{5a^{10}b^5c^{22}}{15a^{-2}b^{14}c^{11}}\right)^3 = \frac{a^{36}c^{33}}{27b^{27}}$