Algebra 2 Name answers ID: 1

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Assignment Date _____ Period ____

Simplify. Your answer should contain only positive exponents.

1) $\dfrac{(y^2)^3}{-2x^2y^2 \cdot -y^4} = \dfrac{y^6}{2x^2y^6} = \boxed{\dfrac{1}{2x^2}}$

2) $\dfrac{-yx^2}{-2y^4 \cdot (x^2y^4)^4} = \dfrac{-yx^2}{-2y^4 \cdot x^8y^{16}} = \boxed{\dfrac{1}{2y^{19}x^6}}$

3) $\dfrac{x^0}{-x^3y^0 \cdot (-x^4y^0)^{-2}} = \dfrac{1}{x^3 \cdot -8} = \boxed{x^5}$

4) $\dfrac{(2x^0y^3)^3}{2x^3y^0 \cdot xy^2} = \dfrac{8y^9}{2x^4y^2} = \boxed{\dfrac{4y^7}{x^4}}$

5) $\dfrac{(x^0y^3)^0}{2xy^{-2} \cdot -2x^3} = \dfrac{1}{-4xy^{-2}x^3} = \boxed{\dfrac{y^2}{-4x^4}}$

6) $\dfrac{(2x^3y^2)^3}{2x^0y^4 \cdot (-y^3)^0} = \dfrac{8x^9y^6}{2y^4} = \boxed{4y^2x^9}$

7) $\dfrac{(2x^{-1})^0 \cdot (-x^{-1}y^4)^{-2}}{2x^4y^2} = \dfrac{x^2y^{-8}}{2x^4y^2} = \boxed{\dfrac{1}{2x^2y^{10}}}$

8) $\left(\dfrac{-y^{-4} \cdot -y^{-4}}{-2x^4}\right)^3 = \left(\dfrac{y^{-8}}{-2x^4}\right)^3 = \dfrac{y^{-24}}{-8x^{12}} = \boxed{\dfrac{1}{-8x^{12}y^{24}}}$

9) $\left(\dfrac{x^4y^{-4}}{-yx^{-3} \cdot -2x^{-2}y^{-1}}\right)^{-3}$

10) $\dfrac{(-2x^2y^0)^{-4}}{-2x^2y^{-1} \cdot -2xy^{-1}}$

Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

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

12) $\dfrac{\left(h^{-\frac{2}{3}}j^{\frac{1}{4}}k^{\frac{4}{3}}\right)^2}{h^{\frac{1}{2}}j^2k^2 \cdot h^{\frac{2}{3}}j^{\frac{1}{2}}k^2}$

see pg 2.

13) $\dfrac{\left(x^{\frac{5}{4}}y^{\frac{3}{2}}z^{-\frac{5}{4}}\right)^2 \cdot x^{-3}}{x^{\frac{1}{3}}}$

14) $\dfrac{\left(mnp^{\frac{3}{4}}\right)^{-\frac{5}{4}}}{\left(m^{\frac{2}{3}}n^2p^{-\frac{3}{2}}\right)^{\frac{3}{4}} \cdot m^{-\frac{3}{4}}p^{\frac{7}{4}}}$

Simplify. Your answer should contain only positive exponents.

15) $\left(\dfrac{-a^{-2}c^7 \cdot a^4b^8c^7}{-a^4c^2}\right)^5$

16) $\dfrac{m^7q^{-6}}{-m^7 \cdot (m^{-6}p^2q^7)^{-4}}$

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A2: exponents

9. $\left(\frac{x^9}{2y^4}\right)^{-3}$

$$\frac{8y^{12}}{x^{27}}$$

10. $\frac{1 \cdot y^2}{16x^8(4x^3)}$

$$\frac{y^2}{64x^{11}}$$

11. $\frac{y^{5/6} z^{-10/9} y^{3/2}}{x^{17/6} z^{-3/2}}$

no fraction exp. in denom.

$$\frac{y^{14/6} z^{7/18}}{x^{17/6}} \left(\frac{x^{1/6}}{x^{1/4}}\right)$$

$$\frac{y^{7/3} z^{7/18} x^{1/6}}{x^3}$$

12. $\frac{h^{-8/6} j^{1/2} k^{8/3}}{h^{5/6} j^{3/2} k^{12/3}}$

$$\frac{1}{h^{13/6} j^2 k^{4/3}} \left(\frac{k^{2/3} h^{5/6}}{k^{2/3} h^{5/6}}\right)$$

$$\frac{k^{2/3} h^{5/6}}{h^3 j^2 k^2}$$

13. $\frac{x^{5/2} y^3 z^{-5/2} \cdot x^{-3}}{x^{1/3}}$

$$\frac{y^3}{x^{5/6} z^{5/2}} \left(\frac{x^{1/6} z^{1/2}}{x^{1/6} z^{1/2}}\right)$$

$$\frac{y^3 x^{1/6} z^{1/2}}{x z^3}$$

14. $\frac{m^{-5/4} n^{-5/4} p^{-15/16}}{m^{1/2} n^{3/2} p^{-9/8} m^{-3/4} p^{7/4}}$

$$\frac{p^{31/16}}{n^{11/4} m} \left(\frac{n^{1/4}}{n^{1/4}}\right)$$

$$\frac{p^{31/16} n^{1/4}}{n^3 m}$$

15. $\left(\frac{a^2 c^{14} b^8}{a^4 c^2}\right)^5$

$$\left(\frac{c^{12} b^8}{a^2}\right)^5$$

$$\frac{c^{60} b^{40}}{a^{10}}$$

16. $\frac{m^7 q^{-6}}{-m^7 m^{24} p^{-8} q^{-28}}$

$$-\frac{p^8 q^{22}}{m^{24}}$$

17) $\dfrac{n^2p^6}{(-m^7n^5p^5)^6 \cdot p^4}$

18) $\dfrac{(x^{-7}y^6z^{-2})^{-4} \cdot -x^5y^3}{x^{-4}y^{-3}z^5}$

19) $\left(\dfrac{p^3q^2r^{-6} \cdot r^5}{p^4q^8}\right)^6$

20) $\dfrac{m^{-5}p^{-7} \cdot m^{-1}n^7p^{-4}}{(-mn^{-7}p^{-8})^8}$

21) $\dfrac{(p^5q^3r^{-7})^4 \cdot r^4}{-pq^{-6}r^2}$

22) $-\dfrac{x^6y^4z^8 \cdot -x^8y^{-6}z^{-3}}{(-yx^3z^{-8})^2}$

17. $\dfrac{n^2p^6}{m^{42}n^{30}p^{30} \cdot p^4}$

$\dfrac{n^2p^6}{m^{42}n^{30}p^{34}}$

$\boxed{\dfrac{1}{m^{42}n^{28}p^{28}}}$

18. $\dfrac{x^{28}y^{-24}z^8 \cdot -x^5y^3}{x^{-4}y^{-3}z^5}$

$\dfrac{-x^{32}y^{-21}z^8}{x^{-4}y^{-3}z^5}$

$\boxed{\dfrac{-x^{36}z^3}{y^{18}}}$

19. $\left(\dfrac{1}{pq^6r}\right)^6$

$\boxed{\dfrac{1}{p^6q^{36}r^6}}$

20. $\dfrac{m^{-6}p^{-11}n^7}{m^8n^{-56}p^{-64}}$

$\boxed{\dfrac{p^{53}n^{63}}{m^{14}}}$

21. $\dfrac{p^{20}q^{12}r^{-28} \cdot r^4}{-pq^{-6}r^2}$

$\boxed{-\dfrac{p^{19}q^{18}}{r^{26}}}$

22. $\dfrac{x^{14}y^{-2}z^5}{y^2x^6z^{-16}}$

$\boxed{\dfrac{x^8z^{21}}{y^4}}$