Laws of exponents Practice Worksheet

Simplify. Your answer should contain only positive exponents.

1,2, 6,7
14, 15

1) $\dfrac{2u^3v^3\cdot(3u^2)^2}{2u^2}$

2) $\dfrac{(4xy^2)^3}{(4y^3)^4\cdot 2y^3}$

3) $\dfrac{(4uv^2)^2}{3u^2v^4\cdot 3v^2}$

4) $\left(\dfrac{4a^4b^3}{3a^4b^3\cdot 4a^3b^4}\right)^3$

5) $\left(\dfrac{3y^3\cdot 3x^3y^4}{4x^4y^2}\right)^4$

6) $\left(\dfrac{3xy^4\cdot 3x^3y^2}{yx^4}\right)^3$

7) $\dfrac{2ba^2}{4a(2a^3b^4)^3}$

$\dfrac{2ba^2}{4\cdot 2^3a^3b^{12}} = \dfrac{2ba^2}{4\cdot 2^3a^{10}b^{12}}$

$= \dfrac{2^{-2}\,b^{-11}\,a^{-8}}{4}$

$= \dfrac{1}{2^3\cdot 4\,b^{11}a^8}$

$= \dfrac{1}{16\,b^{11}a^8}$

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

9) $\dfrac{(m^2n^2)^2}{3m^4n^2\cdot 2m^3n^2}$

10) $\dfrac{x^2}{4x^4y^2\cdot(3x^4y^2)^2}$

11) $\left(\dfrac{n}{m\cdot 2m^4n^4}\right)^4$

12) $\left(\dfrac{3x^2y^3\cdot 4x^3y^2}{3xy^3}\right)^4$

$256x^{16}y^8$

13) $\left(\dfrac{3x^2y^4\cdot x^3y^3}{(2x^2y^3)^4}\right)^2$

14) $\left(\dfrac{2u^4v^3\cdot 2uv^3}{4u^3}\right)^4$

15) $\dfrac{3uv^2}{2u^3v^2\cdot(2v^2)^2}$

16) $\dfrac{(4y)^3}{4y\cdot 3y^2}$