

5-1 & 5-2 Practice Quiz #2

Simplify. Your answer should contain only positive exponents.

1) $2a^4b^3 \cdot 4ab^{-2}c^2$

$$8a^5c^2b$$

2) $2zx^3y^{-4} \cdot 3zx^4y^{-4}$

$$\frac{6z^2x^7}{y^8}$$

3) $(4yx^{-2}z^3)^2$

$$\frac{16y^2z^6}{x^4}$$

4) $(x^{-2}y^{-3}z^3)^{-2}$

$$\frac{x^4y^6}{z^6}$$

5) $\frac{3hkj^{-3}}{3j^3k^{-1}}$

$$\frac{hk^2}{j^6}$$

6) $\frac{4y^4z^{-2}}{3xy^3}$

$$\frac{4y}{3z^2x}$$

7) $\frac{2x^{-2}y^4z^2 \cdot 4y^{-2}z^2 \cdot x^{-1}y^2z^{-3}}{3x^3y^4z^4}$

$$\frac{8}{3x^6z^3}$$

8) $\frac{x^{-3}y^3z^3}{4y^2z^{-3} \cdot 4zx^{-1}y^3}$

$$\frac{z^5}{16x^2y^2}$$

9) $hj^2 \cdot (2jh^{-1})^4$

$$\frac{16j^6}{h^3}$$

10) $2zx^3y^{-4} \cdot (zx^{-2}y^2)^3 \cdot 2z^{-2}$

$$\frac{4z^2y^2}{x^3}$$

11) $\left(\frac{(jk^2)^{-1}}{2jk^2}\right)^2$

$$\frac{1}{4j^4k^8}$$

12) $\frac{m^3n^3p^2}{(2n^{-4}p^2)^2}$

$$\frac{n^{11}m^3}{4p^2}$$

Write each expression in exponential form.

$$13) \frac{1}{\sqrt[3]{3v^2}}$$
$$(3v^2)^{-\frac{1}{3}}$$

$$14) (\sqrt[4]{x})^7$$
$$x^{\frac{7}{4}}$$

$$15) \sqrt[6]{10b}$$
$$(10b)^{\frac{1}{6}}$$

$$16) (\sqrt[5]{n})^6$$
$$n^{\frac{6}{5}}$$

Write each expression in radical form.

$$17) r^{\frac{1}{3}}$$
$$\sqrt[3]{r}$$

$$18) (7p)^{-\frac{1}{3}}$$
$$\frac{1}{\sqrt[3]{7p}}$$

$$19) (7a)^{\frac{1}{3}}$$
$$\sqrt[3]{7a}$$

$$20) x^{\frac{2}{3}}$$
$$(\sqrt[3]{x})^2$$

Simplify. Your answer should contain only positive exponents.

$$21) 4n^{\frac{3}{2}} \cdot 4m^2n^{-3} \cdot 3m^{-2}n^4$$
$$48n^{\frac{5}{2}}$$

$$22) 2a^{-\frac{5}{3}}b^{-2} \cdot 3a^{\frac{3}{2}}b^{-\frac{5}{3}}$$
$$\frac{6a^{\frac{5}{6}}b^{\frac{1}{3}}}{ab^4}$$

$$23) \left(a^{-2}b^{\frac{3}{2}}\right)^2$$
$$\frac{b^3}{a^4}$$

$$24) \left(x^{\frac{4}{3}}y^{\frac{3}{2}}\right)^{\frac{1}{3}}$$
$$x^{\frac{4}{9}}y^{\frac{1}{2}}$$

$$25) \frac{4x^{\frac{5}{3}}y^{-2}}{4x^{-\frac{5}{3}}y^{-2}}$$
$$x^{\frac{10}{3}}$$

$$26) \frac{3vu^{\frac{1}{2}}}{2u^{-1}}$$
$$\frac{3vu^{\frac{3}{2}}}{2}$$