

5-1 & 5-2 Practice Quiz

Simplify. Your answer should contain only positive exponents.

1) $3qr^3 \cdot 2p^2r^2 \cdot 4rp^3q^{-4}$

$$\frac{24r^6p^5}{q^3}$$

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

$$8y^4zx^2$$

3) $(4p^3q^4r^2)^3$

$$64p^9q^{12}r^6$$

4) $(2h^3j^2k^2)^{-2}$

$$\frac{1}{4h^6j^4k^4}$$

5) $\frac{4zx^{-4}y^{-2}}{4zx^{-1}y^4}$

$$\frac{1}{x^3y^6}$$

6) $\frac{3x^3z^3}{2yx^2z^2}$

$$\frac{3xz}{2y}$$

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

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

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

$$\frac{4}{y^6xz}$$

9) $yx^{-1}z^{-3} \cdot (2yx^3z^{-2})^3$

$$\frac{8y^4x^8}{z^9}$$

10) $(2x^3y^4z^3)^4 \cdot 2x^{-2}y^{-1}z^{-4}$

$$32x^{10}y^{15}z^8$$

11) $\left(\frac{(2xyz^3)^3}{yzx^{-1}}\right)^3$

$$512x^{12}y^6z^{24}$$

12) $\frac{(y^{-3}z^2)^{-3}}{xy^{-2}z^{-2}}$

$$\frac{y^{11}}{z^4x}$$

Write each expression in exponential form.

13) $(\sqrt{5x})^3$

$$(5x)^{\frac{3}{2}}$$

14) $\sqrt{7b}$

$$(7b)^{\frac{1}{2}}$$

$$15) \frac{1}{\sqrt[4]{5r}}$$

$$(5r)^{-\frac{1}{4}}$$

$$16) \frac{1}{(\sqrt{7n})^3}$$

$$(7n)^{-\frac{3}{2}}$$

Write each expression in radical form.

$$17) (3n)^{\frac{3}{5}}$$

$$(\sqrt[5]{3n})^3$$

$$18) b^{\frac{4}{3}}$$

$$(\sqrt[3]{b})^4$$

$$19) (5p)^{-\frac{3}{4}}$$

$$\frac{1}{(\sqrt[4]{5p})^3}$$

$$20) (10n)^{-\frac{3}{2}}$$

$$\frac{1}{(\sqrt{10n})^3}$$

Simplify. Your answer should contain only positive exponents.

$$21) b^{-2} \cdot 2a^{\frac{3}{2}}b^{-4}$$

$$\frac{2a^{\frac{3}{2}}}{b^6}$$

$$22) x^{-2}y^2 \cdot x^{-1}y^{-\frac{2}{3}}$$

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

$$23) (v^4)^{-1}$$

$$\frac{1}{v^4}$$

$$24) \left(\frac{7}{v^4}\right)^{-\frac{1}{3}}$$

$$\frac{v^{\frac{5}{12}}}{7}$$

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

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

$$26) \frac{m^{\frac{1}{2}}n^{\frac{5}{4}}}{4m^2n^2}$$

$$\frac{n^{\frac{1}{4}}m^{\frac{1}{2}}}{4nm^2}$$