

Fractions & Exponents - Practice

Find each sum.

1) $\frac{3}{5} + -\frac{2}{7}$

$$\frac{11}{35}$$

2) $-\frac{7}{4} + -\frac{1}{5}$

$$-\frac{39}{20}$$

3) $-\frac{7}{4} + \frac{3}{5}$

$$-\frac{23}{20}$$

4) $-\frac{1}{7} + \frac{4}{3}$

$$\frac{25}{21}$$

Simplify. Your answer should contain only positive exponents.

5) $3x^{-3}y^{-1}z^{-1} \cdot 3y^2z^4$

$$\frac{9yz^3}{x^3}$$

6) $4x^2y^4z^{-2} \cdot 4x^2y^3z^4$

$$16x^4y^7z^2$$

7) $2a^4b^2c^3 \cdot 4ab^2c^3$

$$8a^5b^4c^6$$

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

$$\frac{2b^5}{a^8}$$

9) $x^{\frac{4}{3}}y^{\frac{1}{3}} \cdot 3yx^{\frac{1}{4}}$

$$3x^{\frac{19}{12}}y^{\frac{4}{3}}$$

10) $4y^{\frac{7}{4}}z^{\frac{5}{3}} \cdot x^{\frac{5}{4}}y^{\frac{1}{3}}z^{\frac{1}{2}}$

$$\frac{4z^{\frac{5}{6}}y^{\frac{17}{12}}x^{\frac{5}{4}}}{z^2}$$

$$11) q^2 r^{\frac{2}{3}} \cdot 4p^{\frac{2}{3}} q^{-2} r^{-\frac{3}{2}}$$

$$\frac{4r^{\frac{1}{6}} p^{\frac{2}{3}}}{r}$$

$$12) 4a^{\frac{5}{4}} b^2 c^{-1} \cdot a^{-\frac{1}{2}} b^2 c^{-\frac{1}{3}} \cdot 4a^{\frac{2}{3}} b^{\frac{1}{2}} c^{\frac{3}{2}}$$

$$16a^{\frac{17}{12}} c^{\frac{1}{6}} b^{\frac{9}{2}}$$

Find each difference.

$$13) -\frac{4}{3} - \frac{1}{7}$$

$$-\frac{31}{21}$$

$$14) \frac{5}{3} - \frac{6}{5}$$

$$\frac{7}{15}$$

$$15) \frac{4}{3} - \frac{6}{5}$$

$$\frac{2}{15}$$

$$16) -\frac{1}{2} - \frac{5}{7}$$

$$-\frac{17}{14}$$

Simplify. Your answer should contain only positive exponents.

$$17) \frac{3yx^3z^4}{4x^{-1}z^{-3}}$$

$$\frac{3x^4z^7y}{4}$$

$$18) \frac{4pm^3}{2m^2p^{-2}q^4}$$

$$\frac{2p^3m}{q^4}$$

$$19) \frac{3b^2c^2}{2a^4b^4c^4}$$

$$\frac{3}{2a^4b^2c^2}$$

$$20) \frac{x^3y^3z^2}{2x^3y^3z^4}$$

$$\frac{1}{2z^2}$$

$$21) \frac{j^{\frac{5}{4}} k^{-\frac{3}{2}}}{3h j^{-\frac{5}{3}} k^{-1}}$$

$$\frac{k^2 j^{12}}{3kh}$$

$$22) \frac{2pq^{\frac{1}{2}} r^{\frac{5}{3}}}{3p^{-\frac{3}{2}} q^{-2} r^{\frac{1}{2}}}$$

$$\frac{2p^2 q^2 r^6}{3}$$

$$23) \frac{4x^2 y^{-\frac{5}{3}}}{yx^{-\frac{5}{3}} z^2}$$

$$\frac{4x^3 y^{\frac{11}{3}}}{y^3 z^2}$$

$$24) \frac{2p^{\frac{1}{3}} q^{-\frac{5}{3}}}{m^{\frac{5}{4}} p^{\frac{5}{3}} q^{\frac{1}{2}}}$$

$$\frac{2q^{\frac{5}{6}} p^{\frac{2}{3}} m^4}{q^3 p^2 m^2}$$

Find each product.

$$25) \frac{7}{5} \times \frac{7}{4}$$

$$\frac{49}{20}$$

$$26) \frac{9}{5} \times -\frac{11}{6}$$

$$-\frac{33}{10}$$

$$27) \frac{12}{7} \times -\frac{8}{5}$$

$$-\frac{96}{35}$$

$$28) 2 \times -\frac{8}{7}$$

$$-\frac{16}{7}$$

Simplify. Your answer should contain only positive exponents.

$$29) (2x^2y^{-1}z^4)^4$$

$$\frac{16x^8z^{16}}{y^4}$$

$$30) (2h^{-4}j^3k^{-4})^2$$

$$\frac{4j^6}{h^8k^8}$$

$$31) (4x^{-4}y^3z^{-2})^4$$

$$\frac{256y^{12}}{x^{16}z^8}$$

$$32) (2xy^4z^{-4})^{-1}$$

$$\frac{z^4}{2xy^4}$$

$$33) \left(h^{\frac{2}{3}}j^{\frac{7}{4}}k^{\frac{1}{4}}\right)^{-2}$$

$$\frac{\frac{2}{h^3} \cdot \frac{1}{j^2} \cdot \frac{1}{k^2}}{h^2j^4k}$$

$$34) \left(x^{-2}y^{\frac{3}{4}}z^{\frac{1}{3}}\right)^{\frac{1}{3}}$$

$$\frac{\frac{1}{y^4} \cdot \frac{1}{z^9} \cdot \frac{1}{x^3}}{x}$$

$$35) \left(m^{-1}p^{-\frac{4}{3}}q^4\right)^{\frac{2}{3}}$$

$$\frac{\frac{1}{p^9} \cdot \frac{8}{q^3} \cdot \frac{1}{m^3}}{pm}$$

$$36) \left(m^2p^{-\frac{1}{4}}q^{-\frac{4}{3}}\right)^2$$

$$\frac{m^4p^{\frac{1}{2}}q^{\frac{1}{3}}}{pq^3}$$