

FRACTIONS AND EXPONENTS REVIEW

1. Simplify, then evaluate.

a) $3^2 \times 3 - 3^3 \times 3^0$ _____

b) $2^4 \div 2 + 2^3 \times 2^2$ _____

c) $(-4)^5 \div 4^3 + (-4)^3 \div 4$ _____

d) $(-5)^4 \div 5^2 - (-5)^2$ _____

e) $\frac{(-2)^4 + (-2)^3}{(-2)^2}$ _____

f) $\frac{-3^0 - 3^3}{(-2)^5 - (-2)^2}$ _____

2. Write in exponential form.

a) $(3^2)^4$ _____

b) $(2^5)^6$ _____

c) $[(3^2)^4]^3$ _____

d) $[(-2)^2]^3$ _____

e) $[-(5)^3]^3$ _____

f) $[-(4)^3]^6$ _____

3. Evaluate.

a) $(2^5 \div 2^3)^2$ _____

b) $(2^3 \times 2)^2$ _____

c) $(1+2)^3 - (5-2)^2$ _____

d) $(2^2)^3 - (2^2 + 1)^2$ _____

e) $[-(-3)^2 - 2^2]^2 - [(-2)^2 - 3]^2$ _____

f) $\left[\frac{(-3)^5}{3^3} \right]^2 - \left[\frac{(-2)^5}{2^3} \right]^3$ _____

4. Add or subtract. Leave answer in fraction form.

a) $3\frac{1}{3} + \frac{5}{3}$ _____ b) $3\frac{1}{3} + \left(-\frac{5}{3}\right)$ _____

c) $3\frac{1}{3} - \frac{5}{3}$ _____ d) $3\frac{1}{3} - \left(-\frac{5}{3}\right)$ _____

e) $-2\frac{1}{5} + \frac{13}{5} + 3\frac{3}{5}$ _____ f) $-2\frac{1}{5} + \left(-\frac{13}{5}\right) - 3\frac{3}{5}$ _____

g) $2\frac{1}{5} - \frac{13}{5} - \left(-3\frac{3}{5}\right)$ _____ h) $-\left(-2\frac{1}{5}\right) - \left(-\frac{13}{5}\right) - 3\frac{3}{5}$ _____

5. Add or subtract. Leave answer in fraction form.

a) $\frac{2}{3} + \frac{5}{6}$ _____ b) $\frac{2}{3} - \frac{5}{6}$ _____

c) $-\frac{3}{4} + \frac{1}{3}$ _____ d) $-\frac{3}{4} - \frac{1}{3}$ _____

e) $\frac{5}{8} - \frac{11}{12} + \frac{7}{15}$ _____ f) $-\frac{5}{8} + \frac{11}{12} - \left(-\frac{7}{15}\right)$ _____

g) $\frac{5}{8} - \left(-\frac{11}{12}\right) - \frac{7}{15}$ _____ h) $-\frac{5}{8} + \left(-\frac{11}{12}\right) + \left(-\frac{7}{15}\right)$ _____

i) $3\frac{1}{4} - 1\frac{2}{3} + 3\frac{5}{6}$ _____ j) $-3\frac{1}{4} + 1\frac{2}{3} - \left(-3\frac{5}{6}\right)$ _____

6. Multiply. Leave answer in fraction form.

a) $\frac{1}{3} \times \frac{12}{7}$ _____

b) $-\frac{8}{9} \times \frac{21}{16}$ _____

c) $\frac{8}{25} \times \frac{35}{4} \times \frac{2}{5}$ _____

d) $\frac{5}{14} \times \left(-\frac{21}{10}\right) \times \frac{15}{7}$ _____

e) $-\frac{7}{4} \times \frac{2}{21} \times \frac{14}{8}$ _____

f) $\frac{9}{121} \times \left(-\frac{11}{18}\right) \times \left(-\frac{27}{33}\right)$ _____

7. Divide.

a) $\frac{2}{3} \div \frac{8}{9}$ _____

b) $-\frac{3}{4} \div \frac{15}{8}$ _____

c) $\frac{12}{5} \div 4$ _____

d) $4 \div \frac{12}{15}$ _____

e) $\frac{34}{121} \div \frac{17}{55}$ _____

f) $-\frac{38}{27} \div \frac{57}{18}$ _____

8. Simplify. Leave answer in mixed fraction form.

a) $3\frac{1}{2} \times 2\frac{1}{3}$ _____

b) $3\frac{1}{2} \div 2\frac{1}{3}$ _____

c) $-5\frac{2}{5} \times 3\frac{1}{3}$ _____

d) $-5\frac{2}{5} \div 3\frac{1}{3}$ _____

e) $3\frac{3}{4} \div 1\frac{1}{8} \times 1\frac{2}{25}$ _____

f) $3\frac{1}{4} \div 2\frac{7}{16} \times 1\frac{1}{8}$ _____

Answers

1. a) 0 b) 40 c) -32 d) 0 e) 2 f) $\frac{7}{9}$

2. a) 3^8 b) 2^{30} c) 3^{24} d) 2^6 e) -5^9 f) 2^{36} or 4^{18}

3. a) 16 b) 256 c) 18 d) 39 e) 24 f) 145

4. a) 5 b) $1\frac{2}{3}$ c) $1\frac{2}{3}$ d) 5 e) 4 f) $-8\frac{2}{5}$ g) $3\frac{1}{5}$ h) $1\frac{1}{5}$

5. a) $1\frac{1}{2}$ b) $-\frac{1}{6}$ c) $-\frac{5}{12}$ d) $-1\frac{1}{12}$ e) $\frac{7}{40}$ f) $\frac{91}{120}$ g) $1\frac{9}{120}$ h) $-2\frac{1}{120}$ i) $5\frac{5}{12}$
j) $2\frac{1}{4}$

6. a) $\frac{4}{7}$ b) $-\frac{7}{6}$ c) $\frac{28}{25}$ d) $-\frac{45}{28}$ e) $-\frac{7}{24}$ f) $\frac{9}{242}$

7. a) $\frac{3}{4}$ b) $-\frac{2}{5}$ c) $\frac{3}{5}$ d) 5 e) $\frac{10}{11}$ f) $-\frac{4}{9}$

8. a) $8\frac{1}{6}$ b) $1\frac{1}{2}$ c) -18 d) $-1\frac{31}{50}$ e) $3\frac{3}{5}$ f) $1\frac{1}{2}$