

Prime Factorization - 1

Determine the Prime Factorization of the following numbers. *Write answers in exponential form.*

1) 48 _____

5) 70 _____

2) 76 _____

6) 117 _____

3) 126 _____

7) 84 _____

4) 300 _____

8) 640 _____

Reduce the following fractions to lowest terms by first factoring the numerator and denominator into primes and then canceling common factors. See Example:

$$\text{Example: } \frac{120}{145} = \frac{2 \cdot 2 \cdot 2 \cdot 3 \cdot 5}{5 \cdot 29} = \frac{2 \cdot 2 \cdot 2 \cdot 3 \cdot \cancel{5}}{\cancel{5} \cdot 29} = \frac{24}{29}$$

9) $\frac{24}{64} =$

10) $\frac{57}{78} =$

11) $\frac{33}{120} =$

12) $\frac{98}{176} =$

13) $\frac{72}{117} =$

14) $\frac{105}{420} =$

1) $2^4 \cdot 3$ 3) $2 \cdot 3^2 \cdot 7$ 5) $2 \cdot 5 \cdot 7$ 7) $2^2 \cdot 3 \cdot 7$ 9) $\frac{3}{8}$ 11) $\frac{11}{40}$ 13) $\frac{8}{13}$

2) $2^2 \cdot 19$ 4) $2^2 \cdot 3 \cdot 5^2$ 6) $3^2 \cdot 13$ 8) $2^7 \cdot 5$ 10) $\frac{19}{26}$ 12) $\frac{49}{88}$ 14) $\frac{1}{4}$

Determine the prime factorization of the following numbers. *Write answers in exponential form.*

1) 144 _____ 5) 57 _____

2) 120 _____ 6) 450 _____

3) 210 _____ 7) 72 _____

4) 280 _____ 8) 225 _____

Reduce the following fractions to lowest terms by first factoring the numerator and denominator into primes and then canceling common factors. See example.

Example: $\frac{48}{120} = \frac{2 \cdot 2 \cdot 2 \cdot 2 \cdot 3}{2 \cdot 2 \cdot 2 \cdot 3 \cdot 5} = \frac{\cancel{2} \cdot \cancel{2} \cdot \cancel{2} \cdot 2 \cdot \cancel{3}}{\cancel{2} \cdot \cancel{2} \cdot \cancel{2} \cdot \cancel{3} \cdot 5} = \frac{2}{5}$

9) $\frac{96}{108} =$

10) $\frac{120}{160} =$

11) $\frac{42}{56} =$

12) $\frac{32}{96} =$

13) $\frac{300}{360} =$

14) $\frac{110}{280} =$

- 1) $2^4 \cdot 3^2$ 2) $2 \cdot 3 \cdot 5 \cdot 7$ 3) $3 \cdot 19$ 4) $2^3 \cdot 3^2$ 5) $\frac{8}{9}$ 6) $\frac{3}{4}$ 7) $\frac{5}{6}$
 8) $2^3 \cdot 3 \cdot 5$ 9) $2^3 \cdot 5 \cdot 7$ 10) $2 \cdot 3^2 \cdot 5^2$ 11) $3^2 \cdot 5^2$ 12) $\frac{12}{17}$ 13) $\frac{1}{3}$ 14) $\frac{11}{28}$