

8th Grade Math

Skills Needed:

- Multiplication Facts (Times Tables) from 0 to 12
 - Goals: Need to be able to recite each times table in less than 15 seconds!
- Fractions:
 - Equivalent Fractions
 - Example: $1/2 = 2/4 = 3/6 = 4/8$, etc.
 - Simplest Form
 - Example: $15/45 \rightarrow 1/3$, $14/16 \rightarrow 7/8$
 - Convert Fractions from mixed number to improper fractions, improper fractions to mixed numbers, fractions to decimals, and decimals to fractions
 - Examples: $1 \frac{1}{2} = 3/2$
 $5/4 = 1 \frac{1}{4}$
 $3/4 = 0.75$
 $0.25 = 25/100 = 1/4$
- Area and Perimeter
 - Calculate the perimeter of a rectangle
 - $P = 2(L + W)$
 - Calculate the area of a figure
 - $A = L \times W$
- Exponents: Make a chart, memorize if you can!
 - Squares: Know your squares (example: $1^2 = 1 \times 1 = 1$, $2^2 = 2 \times 2 = 4$, etc.)
 - From 1^2 to 12^2
 - Cubes: Know your cubes (example: $1^3 = 1 \times 1 \times 1 = 1$, $2^3 = 2 \times 2 \times 2 = 8$, etc.)
 - From 1^3 to 12^3
 - Powers: Know your powers with base 2.
 - Example: $2^0 = 1$,
 $2^1 = 2$
 $2^2 = 2 \times 2 = 4$
 $2^3 = 2 \times 2 \times 2 = 8$
 $2^4 = 2 \times 2 \times 2 \times 2 = 16$
...and so on until 2^{12}
 - From power of 0 to 12 for 2's, 3's, 4's, 5's, and 10's
- Know how to isolate single variable equations:
 - $3n - 7 = 14$
 - $3n = 21$
 - $n = 7$

Practice:

- Do all the attached practice pages!

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Reducing Fractions

1) $\frac{60}{66} =$ _____

11) $\frac{16}{32} =$ _____

21) $\frac{28}{49} =$ _____

2) $\frac{18}{36} =$ _____

12) $\frac{6}{54} =$ _____

22) $\frac{6}{48} =$ _____

3) $\frac{12}{30} =$ _____

13) $\frac{18}{27} =$ _____

23) $\frac{16}{32} =$ _____

4) $\frac{7}{21} =$ _____

14) $\frac{3}{6} =$ _____

24) $\frac{24}{48} =$ _____

5) $\frac{81}{108} =$ _____

15) $\frac{5}{10} =$ _____

25) $\frac{3}{21} =$ _____

6) $\frac{6}{12} =$ _____

16) $\frac{3}{30} =$ _____

26) $\frac{90}{110} =$ _____

7) $\frac{12}{14} =$ _____

17) $\frac{2}{4} =$ _____

27) $\frac{56}{96} =$ _____

8) $\frac{24}{30} =$ _____

18) $\frac{8}{18} =$ _____

28) $\frac{10}{100} =$ _____

9) $\frac{30}{36} =$ _____

19) $\frac{40}{64} =$ _____

29) $\frac{40}{50} =$ _____

10) $\frac{7}{21} =$ _____

20) $\frac{20}{60} =$ _____

30) $\frac{7}{63} =$ _____

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Equivalent Fractions

1) $\frac{20}{\quad} = \frac{5}{34}$

2) $\frac{\quad}{19} = \frac{66}{114}$

3) $\frac{28}{44} = \frac{7}{\quad}$

4) $\frac{24}{\quad} = \frac{12}{16}$

5) $\frac{\quad}{39} = \frac{54}{234}$

6) $\frac{\quad}{35} = \frac{16}{140}$

7) $\frac{100}{\quad} = \frac{20}{33}$

8) $\frac{\quad}{22} = \frac{10}{11}$

9) $\frac{\quad}{72} = \frac{2}{12}$

10) $\frac{14}{22} = \frac{7}{\quad}$

11) $\frac{\quad}{15} = \frac{39}{45}$

12) $\frac{12}{33} = \frac{\quad}{165}$

13) $\frac{19}{\quad} = \frac{114}{150}$

14) $\frac{\quad}{35} = \frac{30}{70}$

15) $\frac{16}{72} = \frac{4}{\quad}$

16) $\frac{5}{25} = \frac{30}{\quad}$

17) $\frac{96}{150} = \frac{\quad}{25}$

18) $\frac{4}{25} = \frac{24}{\quad}$

19) $\frac{70}{100} = \frac{\quad}{20}$

20) $\frac{38}{80} = \frac{19}{\quad}$

21) $\frac{4}{\quad} = \frac{20}{150}$

22) $\frac{19}{\quad} = \frac{76}{144}$

23) $\frac{78}{114} = \frac{\quad}{19}$

24) $\frac{28}{\quad} = \frac{14}{24}$

25) $\frac{19}{20} = \frac{114}{\quad}$

26) $\frac{\quad}{60} = \frac{18}{30}$

27) $\frac{5}{18} = \frac{25}{\quad}$

28) $\frac{\quad}{100} = \frac{13}{25}$

29) $\frac{\quad}{35} = \frac{46}{70}$

30) $\frac{31}{33} = \frac{\quad}{99}$



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Convert Between Fractions and Decimals Numbers.

1) $\frac{1}{5}$ =

11) 0.5 =

2) $\frac{1}{3}$ =

12) 0.5 =

3) $\frac{3}{5}$ =

13) 0.6 =

4) $\frac{8}{12}$ =

14) 0.0833 =

5) $\frac{5}{10}$ =

15) 0.8 =

6) $\frac{3}{4}$ =

16) 0.3333 =

7) $\frac{6}{8}$ =

17) 0.3333 =

8) $\frac{2}{3}$ =

18) 0.75 =

9) $\frac{7}{10}$ =

19) 0.625 =

10) $\frac{1}{8}$ =

20) 0.8333 =



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Converting Improper Fractions to Mixed Numbers

1) $\frac{13}{4} =$ _____

2) $\frac{49}{10} =$ _____

3) $\frac{45}{8} =$ _____

4) $\frac{46}{9} =$ _____

5) $\frac{5}{2} =$ _____

6) $\frac{37}{12} =$ _____

7) $\frac{43}{7} =$ _____

8) $\frac{62}{8} =$ _____

9) $\frac{69}{9} =$ _____

10) $\frac{31}{12} =$ _____

11) $\frac{29}{8} =$ _____

12) $\frac{58}{10} =$ _____

13) $\frac{31}{11} =$ _____

14) $\frac{23}{10} =$ _____

15) $\frac{19}{5} =$ _____

Converting Mixed Numbers to Improper Fractions

1) $8\frac{2}{3} =$ _____

2) $2\frac{1}{5} =$ _____

3) $7\frac{4}{5} =$ _____

4) $6\frac{1}{2} =$ _____

5) $3\frac{1}{2} =$ _____

6) $4\frac{3}{4} =$ _____

7) $5\frac{1}{11} =$ _____

8) $6\frac{1}{7} =$ _____

9) $8\frac{2}{3} =$ _____

10) $7\frac{3}{4} =$ _____

11) $8\frac{1}{3} =$ _____

12) $6\frac{2}{3} =$ _____

13) $9\frac{11}{12} =$ _____

14) $4\frac{1}{3} =$ _____

15) $4\frac{4}{7} =$ _____

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Write the Correct Comparison Symbol (>, < or =) in Each Box

1) $\frac{2}{6}$ 0.433

11) $\frac{1}{10}$ 0.1

2) $\frac{2}{8}$ 0.3

12) $\frac{2}{3}$ 0.792

3) $\frac{7}{11}$ 0.511

13) $\frac{1}{2}$ 0.475

4) $\frac{3}{10}$ 0.3

14) $\frac{2}{5}$ 0.25

5) $\frac{5}{12}$ 0.417

15) $\frac{5}{7}$ 0.614

6) $\frac{6}{12}$ 0.5

16) $\frac{2}{4}$ 0.5

7) $\frac{1}{2}$ 0.525

17) $\frac{1}{4}$ 0.25

8) $\frac{3}{8}$ 0.325

18) $\frac{3}{5}$ 0.725

9) $\frac{6}{11}$ 0.695

19) $\frac{2}{3}$ 0.592

10) $\frac{2}{7}$ 0.361

20) $\frac{2}{9}$ 0.097

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Find the Greatest Common Factor for each number pair.

1) 3 , 24 _____

2) 5 , 10 _____

3) 3 , 15 _____

4) 4 , 3 _____

5) 6 , 60 _____

6) 20 , 12 _____

7) 2 , 3 _____

8) 2 , 5 _____

9) 30 , 2 _____

10) 5 , 30 _____

11) 30 , 3 _____

12) 5 , 30 _____

13) 5 , 12 _____

14) 30 , 40 _____

15) 3 , 2 _____

16) 2 , 60 _____

17) 15 , 24 _____

18) 15 , 8 _____

19) 30 , 2 _____

20) 10 , 20 _____



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Find the Least Common Multiple for each number pair.

1) 20 , 2 _____

2) 4 , 30 _____

3) 15 , 5 _____

4) 60 , 12 _____

5) 120 , 40 _____

6) 60 , 15 _____

7) 30 , 60 _____

8) 4 , 10 _____

9) 10 , 5 _____

10) 10 , 4 _____

11) 15 , 60 _____

12) 5 , 6 _____

13) 8 , 60 _____

14) 2 , 15 _____

15) 60 , 3 _____

16) 2 , 40 _____

17) 20 , 12 _____

18) 60 , 30 _____

19) 15 , 5 _____

20) 8 , 4 _____



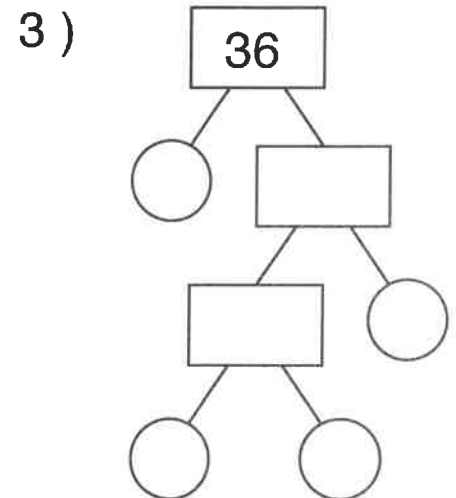
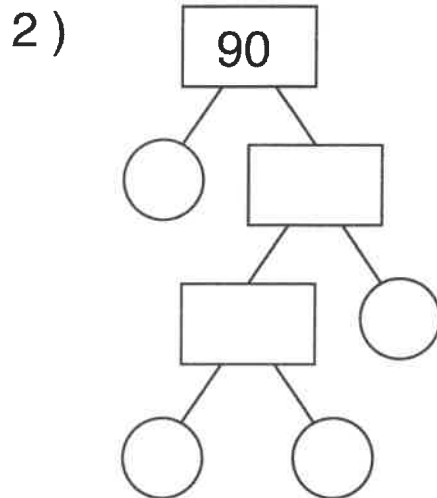
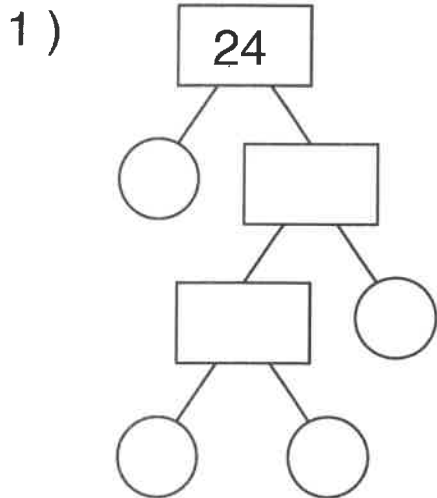
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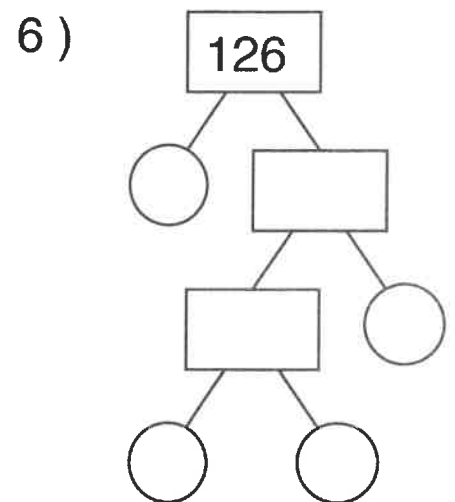
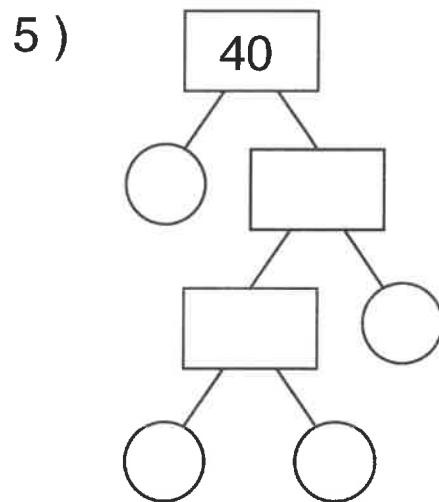
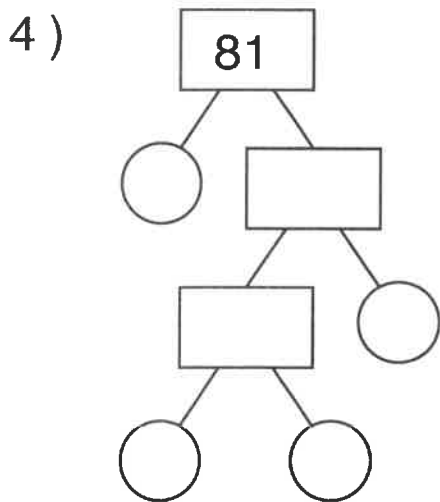
Find the Prime Factors of the Numbers



Prime Factors
_ x _ x _ x _ = 24

Prime Factors
_ x _ x _ x _ = 90

Prime Factors
_ x _ x _ x _ = 36



Prime Factors
_ x _ x _ x _ = 81

Prime Factors
_ x _ x _ x _ = 40

Prime Factors
_ x _ x _ x _ = 126

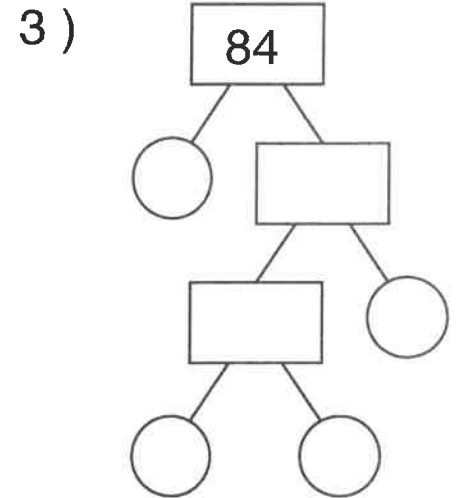
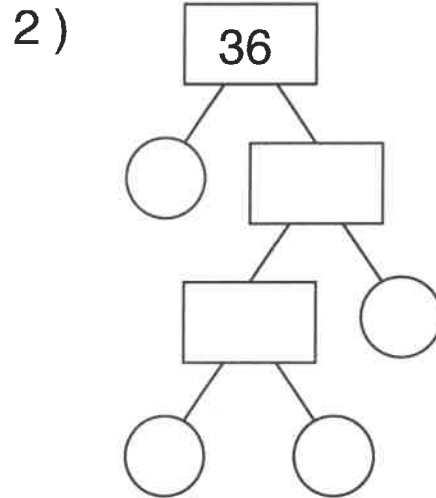
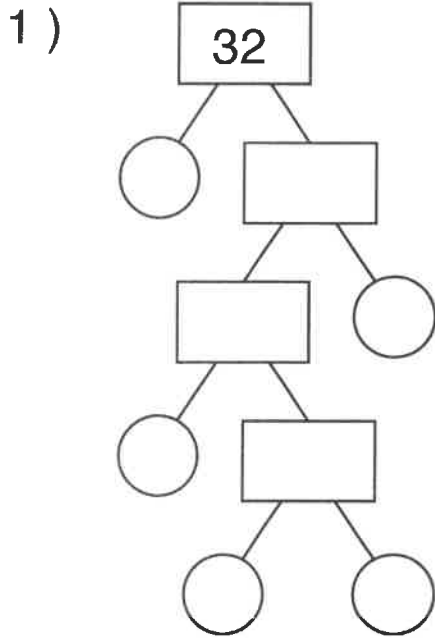
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Find the Prime Factors of the Numbers



Prime Factors

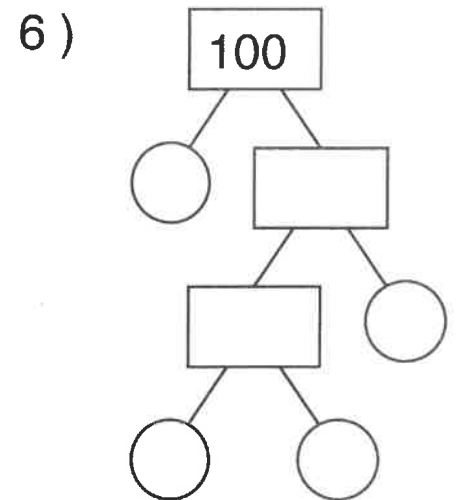
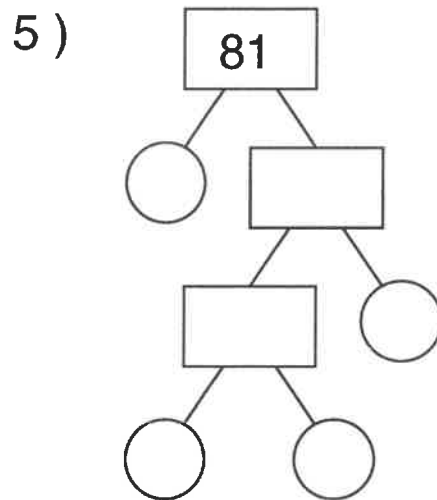
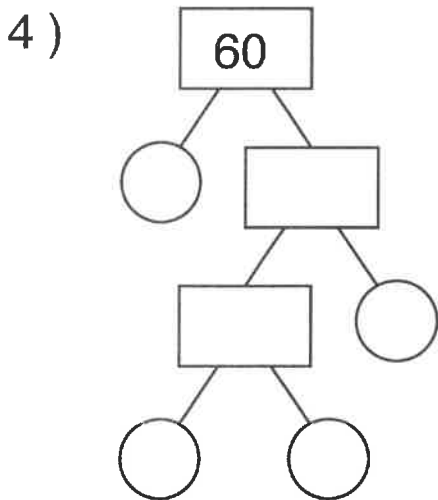
$_ \times _ \times _ \times _ = 32$

Prime Factors

$_ \times _ \times _ = 36$

Prime Factors

$_ \times _ \times _ = 84$



Prime Factors

$_ \times _ \times _ = 60$

Prime Factors

$_ \times _ \times _ = 81$

Prime Factors

$_ \times _ \times _ = 100$

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Find the Missing Factor

1) $n \times 73 = 1825$ $n =$ _____

2) $50 \times n = 1500$ $n =$ _____

3) $n \times 80 = 6160$ $n =$ _____

4) $n \times 41 = 1189$ $n =$ _____

5) $38 \times n = 1976$ $n =$ _____

6) $45 \times n = 2835$ $n =$ _____

7) $96 \times n = 960$ $n =$ _____

8) $32 \times n = 704$ $n =$ _____

9) $n \times 72 = 5904$ $n =$ _____

10) $n \times 97 = 4365$ $n =$ _____

11) $58 \times n = 3654$ $n =$ _____

12) $n \times 61 = 3233$ $n =$ _____

13) $83 \times n = 4565$ $n =$ _____

14) $n \times 65 = 5330$ $n =$ _____

15) $n \times 17 = 1428$ $n =$ _____

16) $12 \times n = 1008$ $n =$ _____

17) $n \times 54 = 5292$ $n =$ _____

18) $n \times 42 = 1764$ $n =$ _____

19) $97 \times n = 1358$ $n =$ _____

20) $13 \times n = 832$ $n =$ _____



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Solving Equations of Different Solution Types

Solve each equation.

1) $8(-7c + 9) = -73 - 56c$

4) $-(3d + 5) = -4 - 3d$

2) $70 = -10(3a - 7) + 30a$

5) $8(7 - 10v) + 71v + 9v = 5$

3) $8 + 2b = 2(b + 4)$

6) $6 + 5s = 7(8 - 3s)$

State whether each equation has one, infinite or no solutions. If just one solution, solve for the variable.

7) $5 - 4z = 2 + 7(8 - 3z)$

10) $-v + v = 2$

8) $-33 + 28m = 7(4m - 5) + 2$

11) $8 = -9r + 2 + 9r$

9) $2 = 5(4b + 6) + 9$

12) $5 + m = 9m - 8(m + 9)$



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Solving Equations of Different Solution Types

Solve each equation.

1) $9(-4s + 3) = 30 - 36s$

4) $24 = -8(9k - 3) + 72k$

2) $2(m + 5) = 8 - (-2m - 2)$

5) $63 + 9t = 9(t + 7)$

3) $9 = 2(-4 - 3u) + 6u$

6) $-n + n = -5$

State whether each equation has one, infinite or no solutions. If just one solution, solve for the variable.

7) $3 = 9(4 + 10v)$

10) $7 - 9w = 4 + 8(10 - 2w)$

8) $4(s - 5) = -20 + 4s$

11) $6 = -7u + 3 + 7u$

9) $-(3s + 10) = -6 - 3s$

12) $5 = 7(3t + 6) + 8$



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Percentage Calculations

Round your answer to two decimal places.

1) $28 \div 357 = \underline{\quad\quad} \%$

6) $673 \div 0.04 = \underline{\quad\quad}$

2) $46\% \times 539 = \underline{\quad\quad}$

7) $0.05 \times 428 = \underline{\quad\quad}$

3) $149 \div 0.56 = \underline{\quad\quad}$

8) $98 \div 712 = \underline{\quad\quad} \%$

4) $358 \div 84\% = \underline{\quad\quad}$

9) $72\% \times 882 = \underline{\quad\quad}$

5) $0.55 \times 934 = \underline{\quad\quad}$

10) $293 \div 71\% = \underline{\quad\quad}$



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Solve the Equations

Round your answers to the nearest hundredth.

1) $15\frac{3}{5} = 5\frac{1}{5}n$

6) $9 = -6.4 + s$

2) $c - 21\frac{3}{4} = 3\frac{6}{7}$

7) $d + 18\frac{2}{7} = -\frac{3}{8}$

3) $-3.5a = 28$

8) $v - 5.7 = -2.6$

4) $\frac{4}{9} = h - \frac{1}{6}$

9) $\frac{x}{2} = -5$

5) $-12 = 6 + f$

10) $-6 = \frac{k}{7}$

