

Math 6 Summer Packet

Answer Key

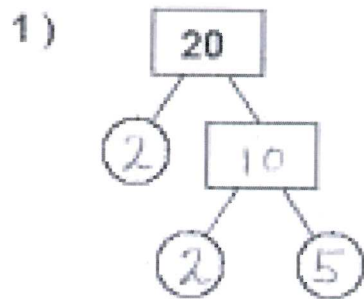
Prime Factorization:

Review: [View this video](#) to review how to get the prime factors of a number.

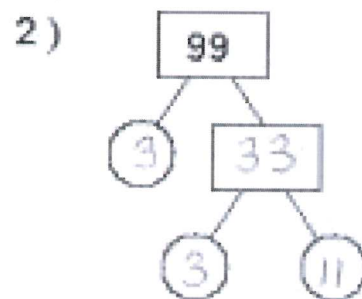
Complete the worksheet on the following page.

Make sure you check your answers against the posted answer key.

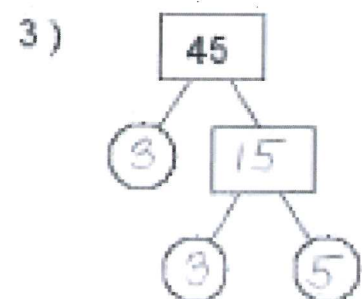
Find the Prime Factors of the Numbers



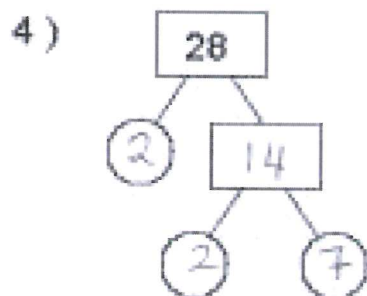
Prime Factors
 $\underline{2} \times \underline{2} \times \underline{5} = 20$



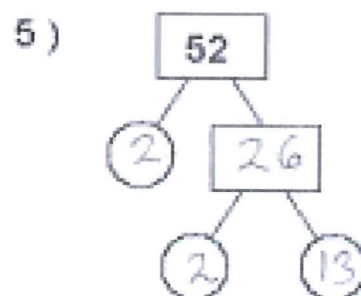
Prime Factors
 $\underline{3} \times \underline{3} \times \underline{11} = 99$



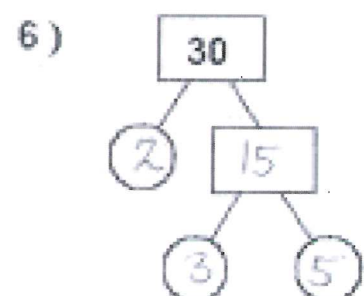
Prime Factors
 $\underline{3} \times \underline{3} \times \underline{5} = 45$



Prime Factors
 $\underline{2} \times \underline{2} \times \underline{7} = 28$



Prime Factors
 $\underline{2} \times \underline{2} \times \underline{13} = 52$



Prime Factors
 $\underline{2} \times \underline{3} \times \underline{5} = 30$

Finding the Greatest Common Factor (GCF):

We use GCF when simplifying fractions to decide what to divide by for the simplest fraction.

Review: [View this video](#) to review how to find the GCF using prime factorization trees.

Complete the worksheet below.

Make sure you check your answers against the posted answer key.

Name : _____ Score : _____

Teacher : _____ Date : _____

Find the Greatest Common Factor for each number pair.

1) 5 , 40 5

2) 15 , 6 3

3) 15 , 20 5

4) 3 , 2 1

5) 4 , 2 2

Finding the Least Common Multiple (LCM):

We use LCM when adding and subtracting fractions to get the least common denominator.

Review: [View this video](#) to review how to find the LCM of two or more numbers using two different methods.

Complete the worksheet on the following page.

Make sure you check your answers against the posted answer key.



Solve using prime factorization.
Find the prime factors of each number.
LCM is the product of factors the greatest times they occur in either number.

Lowest common multiple (LCM)

Grade 5 Factoring Worksheet

Find the lowest common multiple.

$$\begin{array}{r} 1. \quad 4 \quad \frac{2 \times 2}{2 \times 11} \quad \underline{\quad} \quad 44 \\ 22 \quad \frac{2 \times 11}{2 \times 2 \times 11} = 44 \end{array}$$

$$\begin{array}{r} 2. \quad 6 \quad \frac{2 \times 3}{2 \times 2 \times 2 \times 3} \quad \underline{\quad} \quad 24 \\ 24 \quad \frac{2 \times 2 \times 2 \times 3}{2 \times 2 \times 2 \times 3} \end{array}$$

$$\begin{array}{r} 3. \quad 8 \quad \frac{2 \times 2 \times 2}{2 \times 3} \quad \underline{\quad} \quad 24 \\ 6 \quad \frac{2 \times 3}{2 \times 2 \times 2 \times 3} = 24 \end{array}$$

$$\begin{array}{r} 4. \quad 3 \quad \frac{3}{2 \times 2} \quad \underline{\quad} \quad 12 \\ 4 \quad \frac{2 \times 2}{2 \times 2 \times 3} = 12 \end{array}$$

$$\begin{array}{r} 5. \quad 10 \quad \frac{2 \times 5}{2 \times 3} \quad \underline{\quad} \quad 230 \\ 23 \quad \frac{2 \times 3}{2 \times 5 \times 23} = 230 \end{array}$$

$$\begin{array}{r} 6. \quad 2 \quad \frac{2}{2 \times 2} \quad \underline{\quad} \quad 4 \\ 4 \quad \frac{2 \times 2}{2 \times 2} = 4 \end{array}$$

$$\begin{array}{r} 7. \quad 16 \quad \frac{2 \times 2 \times 2 \times 2}{2 \times 2 \times 2 \times 3} \quad \underline{\quad} \quad 48 \\ 24 \quad \frac{2 \times 2 \times 2 \times 3}{2 \times 2 \times 2 \times 2 \times 3} = 48 \end{array}$$

$$\begin{array}{r} 8. \quad 28 \quad \frac{2 \times 2 \times 7}{2 \times 3} \quad \underline{\quad} \quad 84 \\ 6 \quad \frac{2 \times 3}{2 \times 2 \times 3 \times 7} = 84 \end{array}$$

$$\begin{array}{r} 9. \quad 10 \quad \frac{2 \times 5}{19} \quad \underline{\quad} \quad 190 \\ 19 \quad \frac{19}{2 \times 5 \times 19} = 190 \end{array}$$

$$\begin{array}{r} 10. \quad 14 \quad \frac{2 \times 7}{2 \times 2 \times 7} \quad \underline{\quad} \quad 28 \\ 28 \quad \frac{2 \times 2 \times 7}{2 \times 2 \times 7} = 28 \end{array}$$

$$\begin{array}{r} 11. \quad 7 \quad \frac{7}{3} \quad \underline{\quad} \quad 21 \\ 3 \quad \frac{3}{3 \times 7} = 21 \end{array}$$

$$\begin{array}{r} 12. \quad 4 \quad \frac{2 \times 2}{29} \quad \underline{\quad} \quad 116 \\ 29 \quad \frac{29}{2 \times 2 \times 29} \end{array}$$

$$\begin{array}{r} 13. \quad 19 \quad \frac{19}{3 \times 3} \quad \underline{\quad} \quad 171 \\ 9 \quad \frac{3 \times 3}{3 \times 3 \times 19} = 171 \end{array}$$

$$\begin{array}{r} 14. \quad 9 \quad \frac{3 \times 3}{11} \quad \underline{\quad} \quad 99 \\ 11 \quad \frac{11}{3 \times 3 \times 11} \end{array}$$

Order of Operations

We use order of operations to get the right answer when solving problems with different operations (+, -, x, ÷) and grouping, like ().

Review: use **GEMDAS** to solve math expressions like the ones below.

Do the following, in order:

Grouping – solve the problems inside the ().

Exponents – if any of the number have exponents, multiply them by themselves as many times as the exponents. (Example: $4^2 = 4 \times 4$, $3^4 = 3 \times 3 \times 3 \times 3$, etc.)

Multiply and Divide – solve any multiplication and division, making sure to start from left to right.

Add and Subtract – solve any addition and subtraction, making sure to start from left to right.

Your answer will be one number.

Example: $(3 + 12) + (10 \div 2) \times 8$

$$4 \quad + \quad 5 \quad \times 8$$

$$4 \quad + \quad 40$$

$$44$$

Solve the problems inside () first.

Multiply before you add.

Add.

Complete the worksheet on the following page.

Make sure you check your answers against the posted answer key.

EVALUATE EACH EXPRESSION.

11) the quotient of 22 and 2

$$22 \div 2 = 11$$

12) the sum of 11 and 12

$$11 + 12 = 23$$

USE GEMDAS for order of operations

13) $(5)(7 + 1) + 2$

$$(5)(8 \div 2)$$

$$(5)(4)$$

$$\textcircled{20}$$

14) $((10)(2)) + (6 - 2)$

$$(20) \div (3)$$

$$\textcircled{\frac{20}{3} \text{ or } 6\frac{2}{3}}$$

15) $((7)(2) + 4) + 3$

$$(14 + 4) \div 3$$

$$18 \div 3$$

$$\textcircled{6}$$

16) $2 + (6 - 4) + 6$

$$2 \div 2 + 6$$

$$1 + 6$$

$$\textcircled{7}$$

17) $(7 - 3) + ((2)(2))$

$$4 \div 4$$

$$\textcircled{1}$$

18) $(2)(3) + (5)(5)$

$$6 + 25$$

$$\textcircled{31}$$

Decimal Addition and Subtraction:

Review: Remember to line up the numbers by their place value before you add or subtract.

Example: $1.02 + 21.3$

I want to set up by place value (notice that I put a 0 in the hundredth place in 21.3, so I can line up with the 2 in the hundredths place in 1.02).

$$\begin{array}{r} 1.02 \\ + 21.30 \\ \hline 22.32 \end{array}$$

Do NOT line up by digits because that would give you the wrong answer.

Incorrect solution:

~~$$\begin{array}{r} 1.02 \\ + 21.3 \\ \hline 31.5 \end{array}$$~~

Complete the worksheet on the following page (carefully checking if it is addition or subtraction).

Make sure you check your answers against the posted answer key.



Adding and Subtracting Decimals

Solve each problem.

1) $12.522 + 8.8 = \underline{21.322}$

2) $12.9 + 10.021 = \underline{22.921}$

3) $41.1 + 29.719 = \underline{70.819}$

4) $98.33 - 55.7 = \underline{42.63}$

5) $14.9 + 9.81 = \underline{24.71}$

Decimal Multiplication:

Review: [Watch this video](#) to review how to multiply decimal numbers

Complete the problems below.

Make sure you check your answers against the posted answer key.

Multiplying decimals (1 or 2 digits) (in columns)

Find the product.

$$\begin{array}{r} 1. \quad 6.46 \\ \times 4.0 \\ \hline 25.840 \end{array}$$

$$\begin{array}{r} 2. \quad 51.6 \\ \times 3.9 \\ \hline 201.24 \end{array}$$

$$\begin{array}{r} 3. \quad 7.98 \\ \times 4.0 \\ \hline 31.920 \end{array}$$

$$\begin{array}{r} 4. \quad 4.07 \\ \times 5.3 \\ \hline 21.571 \end{array}$$

$$\begin{array}{r} 5. \quad 15.0 \\ \times 5.8 \\ \hline 87.00 \end{array}$$

$$\begin{array}{r} 6. \quad 7.07 \\ \times 3.5 \\ \hline 24.745 \end{array}$$

Decimal Division:

Review: [Watch this video](#) to review how to divide decimal numbers

Complete the problems below.

Make sure you check your answers against the posted answer key.

1) $3.3 \div 0.1 = \underline{\quad}$

2) $1.0 \div 0.2 = \underline{\quad}$

3) $1.2 \div 0.1 = \underline{\quad}$

4) $4.2 \div 0.7 = \underline{\quad}$

5) $6.8 \div 0.2 = \underline{\quad}$

6) $5.7 \div 0.3 = \underline{\quad}$

7) $0.9 \div 0.3 = \underline{\quad}$

8) $1.9 \div 0.1 = \underline{\quad}$

9) $5.7 \div 0.1 = \underline{\quad}$

10) $5.2 \div 0.2 = \underline{\quad}$

Answers

1) 33

2) 5

3) 12

4) 6

5) 34

6) 19

7) 3

8) 19

9) 57

10) 26

Fraction and Mixed Number Addition/Subtraction:

Review: [Watch this video](#) to review how to add and subtract fractions and mixed numbers. Always start by finding the least common denominator.

Complete the problems below.

Make sure you check your answers against the posted answer key.

Evaluate each expression. Leave answers as improper fractions, if necessary.

73) $2 - \frac{7}{4}$

$$\frac{8}{4} - \frac{7}{4} = \frac{1}{4}$$

74) $2 + 4\frac{1}{4}$

$$6\frac{1}{4}$$

75) $3\frac{1}{6} - \frac{3}{2}$ $\left(\frac{5}{3}\right)$

$$\frac{19}{6} - \frac{3}{2 \times 3}$$

$$\frac{19}{6} - \frac{9}{6} = \frac{10}{6} = \frac{5}{3}$$

76) $1 - \frac{3}{5}$

$$\frac{5}{5} - \frac{3}{5} = \frac{2}{5}$$

77) $\frac{11}{6} - \frac{1}{3} \times 2$

$$\frac{11}{6} - \frac{2}{6} = \frac{9}{6} = \frac{3}{2}$$

78) $2\frac{1}{2} + 2\frac{1}{2}$

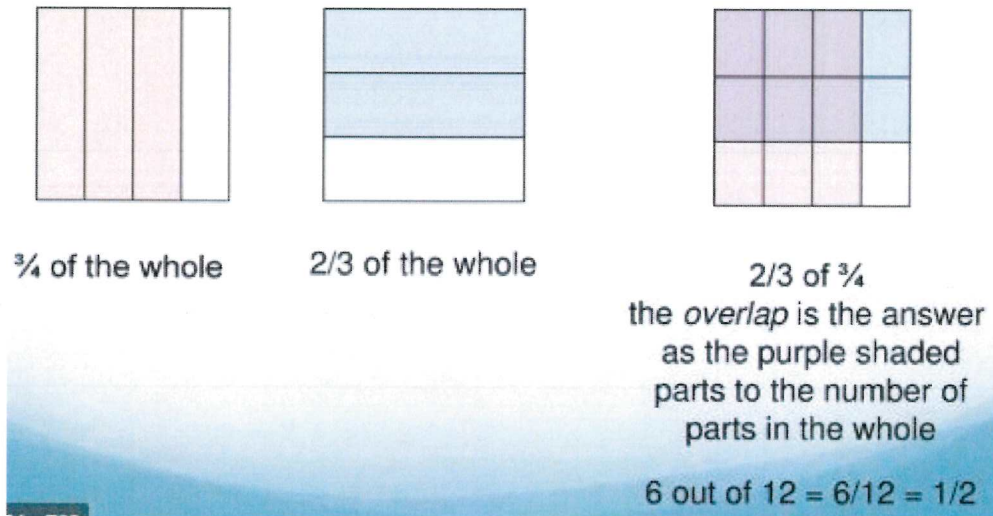
$$5$$

Fraction and Mixed Number Multiplication:

When multiplying fractions, we're finding the part **of** a part.

So $2/3 \times 3/4$ is the same as asking what is $3/4$ of $2/3$?

What is three quarters of two thirds?



Review: [Watch this video](#) to review how to multiply fractions.

You do NOT need to find a least common denominator when multiplying and dividing fractions and mixed numbers.

Here are the steps for multiplying mixed numbers.

1. Change each **number** to an improper **fraction**.
2. Simplify if possible.
3. **Multiply** the numerators and then the denominators.
4. Put answer in lowest terms.
5. Check to be sure the answer makes sense.

Complete the problems on the next page.

Make sure you check your answers against the posted answer key.

Find the product.

1. $3\frac{2}{8} \times \frac{9}{10} = 2\frac{37}{40}$ _____

2. $1\frac{1}{3} \times \frac{3}{8} = \frac{1}{2}$ _____

3. $2\frac{4}{10} \times \frac{4}{5} = 1\frac{23}{25}$ _____

4. $1\frac{2}{4} \times \frac{5}{6} = 1\frac{1}{4}$ _____

5. $1\frac{4}{12} \times \frac{2}{12} = \frac{2}{9}$ _____

6. $3\frac{1}{8} \times \frac{1}{4} = \frac{25}{32}$ _____

7. $3\frac{2}{3} \times \frac{2}{8} = \frac{11}{12}$ _____

8. $3\frac{1}{4} \times \frac{2}{6} = 1\frac{1}{12}$ _____

9. $2\frac{1}{2} \times \frac{3}{6} = 1\frac{1}{4}$ _____

10. $3\frac{1}{6} \times \frac{1}{2} = 1\frac{7}{12}$ _____

Fraction and Mixed Number Division:

When dividing fractions, we're finding how many of the divisor (2nd number) are in the dividend (1st number).

So $2/3 \div 3/4$ is the same as asking **how many $3/4$ are in $2/3$?**

How many $3/4$ are in $2/3$?

Review: [Watch this video](#) to review how to divide fractions and mixed numbers.

You do NOT need to find a least common denominator when multiplying and dividing fractions and mixed numbers.

Complete the problems on the next page.

Make sure you check your answers against the posted answer key.

Find the quotient.

1. $\frac{1}{4} \div \frac{9}{10} = \frac{5}{18}$

2. $\frac{5}{9} \div \frac{1}{2} = 1\frac{1}{9}$

3. $\frac{1}{3} \div \frac{6}{9} = \frac{1}{2}$

4. $\frac{8}{10} \div \frac{2}{5} = 2$

5. $\frac{3}{8} \div \frac{7}{8} = \frac{3}{7}$

6. $\frac{2}{5} \div \frac{1}{2} = \frac{4}{5}$

7. $\frac{5}{10} \div \frac{6}{12} = 1$

Percents:

Review: You can solve any fraction problem by using the proportion

$$\frac{\text{Part}}{\text{Whole}} = \frac{\text{Percent}}{100}$$

Complete the problems below AND on the next two pages.

Make sure you check your answers against the posted answer key.

1. What is 16% of 42?

6.72

2. What 0.5% of 12?

0.06

3. What is 8% of 12.5?

1

4. What is 0.1% of 13.2?

0.0132

Write the following as a percent.

5. $0.85 = 85\%$

6. $2.13 = 213\%$

7. $0.016 = 1.6\%$

Write the following as a decimal and a fraction in simplest form.

8. $39\% = 0.39, \frac{39}{100}$

9. $212\% = 2.12, 2 \frac{3}{25}$

10. $0.22\% = 0.22, \frac{11}{50}$

Write the following as a percent. (round your answer to the nearest tenth)

$$11. \frac{3}{8} = 37.5\%$$

$$12. \frac{4}{10} = 40\%$$

$$11. \frac{2}{7} = 28.6\%$$

Good job completing this packet!

Have a great summer!!