

# Magnolia School

## 8th Grade Summer Math Packet

Math is a subject that continually builds on itself. Having a solid foundation in math is important for continued growth and learning in the subject. Keeping this in mind, we have put together a summer packet to help our students stay sharp over the summer. This packet contains an overview of different concepts that were learned in 7th grade.

All students should complete this packet and bring it with them on the first day of school. We will review the material as a class and go over any questions.

Students should show their work on each problem and use additional paper as needed. We are looking forward to seeing you in school soon!

# Reference

## Customary Units

Customary Units	
Length	Capacity
1 foot (ft) = 12 inches (in.)	1 cup (c) = 8 fluid ounces (fl oz)
1 yard (yd) = 3 ft = 36 in.	1 pint (pt) = 2 c
1 mile (mi) = 5280 ft	1 quart (qt) = 2 pt
1 mile = 1760 yd	1 gallon (gal) = 4 qt = 128 fl oz
Weight	
1 pound (lb) = 16 ounces (oz)	1 ton (T) = 2000 lb

## Metric Units

Metric Units	
Length	Capacity
1000 meters (m) = 1 kilometer (km)	1000 liters (L) = 1 kiloliter (kL)
100 centimeters (cm) = 1 m	1000 milliliters (mL) = 1 L
1000 millimeters (mm) = 1 m	Mass
10 mm = 1 cm	1000 grams (g) = 1 kilogram (kg)
100 cm = 1 m	1000 milligrams (mg) = 100 centigrams = 1 g

Name \_\_\_\_\_

## Place Value (with Powers of 10)

Write the factors. Then, find the product for each.

1.  $10^5$  \_\_\_\_\_ 2.  $10^4$  \_\_\_\_\_

3.  $10^2$  \_\_\_\_\_ 4.  $10^6$  \_\_\_\_\_

5.  $10^{11}$  \_\_\_\_\_

6.  $10^8$  \_\_\_\_\_

7.  $10^9$  \_\_\_\_\_

8.  $10^{13}$  \_\_\_\_\_

Write each as a decimal.

9.  $10^{-2}$  \_\_\_\_\_ 10.  $10^{-7}$  \_\_\_\_\_

11.  $10^{-9}$  \_\_\_\_\_ 12.  $10^{-10}$  \_\_\_\_\_

13.  $10^{-3}$  \_\_\_\_\_ 14.  $10^{-12}$  \_\_\_\_\_

15.  $10^{-1}$  \_\_\_\_\_ 16.  $10^{-5}$  \_\_\_\_\_

Use the place-value-chart to write each number in expanded form.

Billions	Hundred Millions	Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones	Tenths	Hundredths	Thousandths	Ten-Thousandths
1,000,000,000	100,000,000	10,000,000	1,000,000	100,000	10,000	1,000	100	10	1	0.1	0.01	0.001	0.0001
$10^9$	$10^8$	$10^7$	$10^6$	$10^5$	$10^4$	$10^3$	$10^2$	$10^1$	$10^0$	$10^{-1}$	$10^{-2}$	$10^{-3}$	$10^{-4}$

Standard Form

Expanded Form

17. 28,106,004.0007 \_\_\_\_\_

18. 1,006.0203 \_\_\_\_\_

19. 1,009,123,900.001 \_\_\_\_\_

20. 402,900,105.06 \_\_\_\_\_

Name \_\_\_\_\_

## Compare and Order Numbers (Decimals)

Use  $<$ ,  $=$ , or  $>$  to compare the decimals.

1.  $1.876 \bigcirc 1.097$

2.  $0.0019 \bigcirc 0.0019$

3.  $0.0456 \bigcirc 0.0765$

4.  $2.012 \bigcirc 3.0017$

5.  $0.5011 \bigcirc 0.0018$

6.  $0.0341 \bigcirc 0.0341$

Use place value to order the decimals from greatest to least.

7. 0.6231; 0.6010; 1.003; 0.6229

\_\_\_\_\_

8. 0.0017; 0.0143; 1.0011; 0.0092

\_\_\_\_\_

9. 2.485; 2.472; 2.501; 1.982

\_\_\_\_\_

11. 0.0910; 0.0911; 0.0903; 0.097

\_\_\_\_\_

13. 3.012; 3.021; 0.301; 3.001

\_\_\_\_\_

10. 0.0004; 0.001; 0.0002; 0.0019

\_\_\_\_\_

12. 1.0001; 0.0001; 0.001; 1.0010

\_\_\_\_\_

14. 0.071; 0.017; 1.0007; 0.0077

\_\_\_\_\_

Use place value to order the decimals from least to greatest.

15. 0.034; 0.004; 0.013; 1.03

\_\_\_\_\_

17. 5.008; 5.0012; 5.021; 0.508

\_\_\_\_\_

19. 0.0007; 0.007; 0.701; 0.001

\_\_\_\_\_

21. 1.129; 1.921; 1.2109; 1.09

\_\_\_\_\_

16. 0.0096; 0.0006; 0.0069; 0.0908

\_\_\_\_\_

18. 1.1042; 1.0421; 1.004; 0.142

\_\_\_\_\_

20. 0.057; 0.007; 0.0012; 0.502

\_\_\_\_\_

22. 3.104; 3.001; 4.002; 3.401

\_\_\_\_\_

**Remember:**

Line up the decimal points.  
Compare the digits in each place,  
starting with the greatest place value.

Name \_\_\_\_\_

## Estimation: Rounding and Compatible Numbers

Use rounding to estimate each decimal sum.

**Remember:**  
Round each decimal to the greatest nonzero place of the least number.  
Add the rounded numbers.

1. 
$$\begin{array}{r} 2.0067 \\ 0.5704 \\ +0.1807 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 1.092 \\ 1.012 \\ +0.881 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 5.0192 \\ 4.0937 \\ +1.0029 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 0.6752 \\ 0.0986 \\ +0.0378 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 3.098 \\ 2.329 \\ +3.003 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 0.0898 \\ 0.0267 \\ +0.8701 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 1.21 \\ 0.87 \\ +0.03 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 67.0518 \\ 36.0012 \\ +21.1003 \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 0.0472 \\ 0.1563 \\ +0.6724 \\ \hline \end{array}$$

Use compatible numbers to estimate decimal quotients.

**Remember:**  
Think of nearby numbers that are easy to compute with mentally.  
Divide.

10.  $7\overline{)4.39}$  \_\_\_\_\_

11.  $7\overline{)0.355}$  \_\_\_\_\_

12.  $8\overline{)7.310}$  \_\_\_\_\_

13.  $2\overline{)0.711}$  \_\_\_\_\_

14.  $4\overline{)2.721}$  \_\_\_\_\_

15.  $3\overline{)1.901}$  \_\_\_\_\_

16.  $5\overline{)4.15}$  \_\_\_\_\_

17.  $2\overline{)0.079}$  \_\_\_\_\_

18.  $9\overline{)5.38}$  \_\_\_\_\_

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## Properties of Addition and Multiplication

Use the Commutative Property to solve.

**Think:** "order"  
 $a + b = b + a$   
 $a \times b = b \times a$

1.  $1.6 + 0.2 =$   
\_\_\_\_\_

2.  $2.03 + 0.16 =$   
\_\_\_\_\_

3.  $1.5 \times 1.1 =$   
\_\_\_\_\_

4.  $0.7 \times 0.4 =$   
\_\_\_\_\_

5.  $3.4 + 2.5 =$   
\_\_\_\_\_

6.  $1.8 + 1.2 =$   
\_\_\_\_\_

7.  $0.3 \times 0.9 =$   
\_\_\_\_\_

8.  $3.5 + 0.3 =$   
\_\_\_\_\_

9.  $0.04 \times 0.1 =$   
\_\_\_\_\_

Use the Associative Property to solve.

10.  $(1.7 + 1.1) + 0.3 = 1.7 + (1.1 + 0.3)$   
\_\_\_\_\_

**Think:** "grouping"  
 $(a + b) + c = a + (b + c)$   
 $(a \times b) \times c = a \times (b \times c)$

11.  $(3.1 + 2.5) + 0.1 = 3.1 + (2.5 + 0.1)$   
\_\_\_\_\_

12.  $(0.3 \times 1.2) \times 0.6 = 0.3 \times (1.2 \times 0.6)$   
\_\_\_\_\_

13.  $(0.9 \times 0.2) \times 0.4 = 0.9 \times (0.2 \times 0.4)$   
\_\_\_\_\_

14.  $(1.5 \times 0.8) \times 1.4 = 1.5 \times (0.8 \times 1.4)$   
\_\_\_\_\_

15.  $(5.2 + 0.5) + 0.4 = 5.2 + (0.5 + 0.4)$   
\_\_\_\_\_

16.  $(1.0 \times 0.6) \times 1.3 = 1.0 \times (0.6 \times 1.3)$   
\_\_\_\_\_

Name \_\_\_\_\_

**Use the Identity Property to solve.**

**Think: "same"**  
 $a + 0 = 0 + a$   
 $a \times 1 = 1 \times a$

17.  $6.11 + 0 =$  \_\_\_\_\_

18.  $0.8 \times 1 =$  \_\_\_\_\_

19.  $1.13 \times 1 =$  \_\_\_\_\_

20.  $4.01 + 0 =$  \_\_\_\_\_

21.  $0.7 + 0 =$  \_\_\_\_\_

22.  $1.75 \times 1 =$  \_\_\_\_\_

23.  $2.006 + 0 =$  \_\_\_\_\_

**Use the Zero Property of Multiplication to solve.**

**Think: "0 product"**  
 $a \times 0 = 0 \times a$

24.  $1.24 \times 0 =$  \_\_\_\_\_

25.  $0.786 \times 0 =$  \_\_\_\_\_

26.  $0.0045 \times 0 =$  \_\_\_\_\_

27.  $3.65 \times 0 =$  \_\_\_\_\_

28.  $2.08 \times 0 =$  \_\_\_\_\_

29.  $0.054 \times 0 =$  \_\_\_\_\_

30.  $1.932 \times 0 =$  \_\_\_\_\_

**Use the Distributive Property of Multiplication over Addition to solve.**

31.  $0.7(0.4 + 1.3) =$

**Think: "same factor across addends"**  
 $a(b + c) = (a \times b) + (a \times c)$

\_\_\_\_\_

32.  $1.4(0.2 + 0.4) =$

33.  $2.0(0.5 + 2.1) =$

\_\_\_\_\_

\_\_\_\_\_

34.  $0.02(0.8 + 2.06) =$

35.  $1.3(1.1 + 1.6) =$

\_\_\_\_\_

\_\_\_\_\_

36.  $3.5(0.5 + 1.0) =$

37.  $0.1(0.6 + 0.9) =$

\_\_\_\_\_

\_\_\_\_\_

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## Order of Operations with Integers

**Compute.**

1.  $24 - 3 \times 5 \div (-5) + 2^2$   
\_\_\_\_\_

2.  $[21 + (4 \times 3)] \div 3$   
\_\_\_\_\_

4.  $(11 - 4) \times 6 - 2 \times (-7 + 2)$   
\_\_\_\_\_

6.  $54 \div 9 + 6 \times 4$   
\_\_\_\_\_

8.  $(9 - 2) \times 7 - 1 \times (12 - 2)$   
\_\_\_\_\_

10.  $(14 + 6) \div 5 + 9 \times (-11 + 6)$   
\_\_\_\_\_

12.  $(33 - 18) \times 2 - 5 \times (18 - 9)$   
\_\_\_\_\_

3.  $42 \div 7 \times 2$   
\_\_\_\_\_

5.  $[31 + (3 \times 3)] \div (-8)$   
\_\_\_\_\_

7.  $[52 - (2 \times 5)] \div 7$   
\_\_\_\_\_

9.  $28 - 4 \times 4 \div 8 + (-2^3)$   
\_\_\_\_\_

11.  $[24 + (3 \times 8)] \div 6$   
\_\_\_\_\_

13.  $-30 + 22 \times 3 \div 6 + (4^2)$   
\_\_\_\_\_

**Remember:**

Order of Operations

1. ( ) before [ ]

2. exponents

3. "×" or "÷" left to right

4. "+" or "-" left to right



Name \_\_\_\_\_

**Compute.**

14.  $(24 + 1) \div 5 + 7 \times (11 - 9)$

15.  $[-10 + (-6 \times 9)] \div 8$

**Simplify.**

16.  $\frac{(14) + (-6)}{-8 - (-4)}$  \_\_\_\_\_

**Remember:**

A fraction bar is also a grouping symbol. Do any computation above or below before simplifying.

17.  $\frac{(2 + 3) - (5 + 6)}{7 + (-5)}$  \_\_\_\_\_

18.  $\frac{21 \div (8 - 1)}{6 - 3}$  \_\_\_\_\_

19.  $\frac{(17 - 7) - (4 - 2)}{12 - 8}$  \_\_\_\_\_

20.  $\frac{(53) + (-9)}{14 - 3}$  \_\_\_\_\_

21.  $\frac{2^3 - (5 - 1)}{7 - 3}$  \_\_\_\_\_

22.  $\frac{3 \times (12 - 5)}{4 + 3}$  \_\_\_\_\_

23.  $\frac{(12 + 36) \div 6 - 2 \times (8 - 6)}{5^2 - (10 + 11)}$  \_\_\_\_\_

24.  $\frac{[16 + (4 \times 6)] \div 5}{2(21 - 19)}$  \_\_\_\_\_

25.  $\frac{[56 - (6 \times 4)] \div (-8)}{(4^2) + (-22 + 15)}$  \_\_\_\_\_

26.  $\frac{2 \times 7 - [(16 \div 8) + 2]}{5(9 - 2^3)}$  \_\_\_\_\_

Name \_\_\_\_\_

## Prime and Composite Numbers

**Find all the factors for each number.**  
**Write whether the number is prime or composite.**

**Remember:**

A number is *prime* when it has exactly two factors, itself and 1.

A number is *composite* when it has more than two factors.

0 and 1 are neither prime nor composite.

1. 15

\_\_\_\_\_  
Factors of 15: \_\_\_\_\_

2. 30

\_\_\_\_\_  
Factors of 30: \_\_\_\_\_  
\_\_\_\_\_

3. 245

\_\_\_\_\_  
Factors of 245: \_\_\_\_\_  
\_\_\_\_\_

4. 46

\_\_\_\_\_  
Factors of 46: \_\_\_\_\_

5. 181

\_\_\_\_\_  
Factors of 181: \_\_\_\_\_

6. 302

\_\_\_\_\_  
Factors of 302: \_\_\_\_\_

7. 49

\_\_\_\_\_  
Factors of 49: \_\_\_\_\_

8. 163

\_\_\_\_\_  
Factors of 163: \_\_\_\_\_

9. 12

\_\_\_\_\_  
Factors of 12: \_\_\_\_\_

10. 11

\_\_\_\_\_  
Factors of 11: \_\_\_\_\_

11. 23

\_\_\_\_\_  
Factors of 23: \_\_\_\_\_

12. 71

\_\_\_\_\_  
Factors of 71: \_\_\_\_\_

13. 125

\_\_\_\_\_  
Factors of 125: \_\_\_\_\_

Name \_\_\_\_\_

## Multiply Decimals

Find the product.

**Remember:**

Multiply as you would with whole numbers.

Count the number of decimal places in both factors.

Mark off the *same* number of decimal places in the product.

1. 
$$\begin{array}{r} 1.26 \\ \times 27 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 0.181 \\ \times 0.73 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 2.29 \\ \times 0.13 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 0.87 \\ \times 15 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 4.16 \\ \times 1.4 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 0.39 \\ \times 36 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 3.198 \\ \times 0.87 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 1.35 \\ \times 51 \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 71.12 \\ \times 0.11 \\ \hline \end{array}$$

10. 
$$\begin{array}{r} 0.764 \\ \times 2.1 \\ \hline \end{array}$$

11. 
$$\begin{array}{r} 0.612 \\ \times 0.51 \\ \hline \end{array}$$

12. 
$$\begin{array}{r} 2.13 \\ \times 12 \\ \hline \end{array}$$

13. 
$$\begin{array}{r} 3.6 \\ \times 2.1 \\ \hline \end{array}$$

14. 
$$\begin{array}{r} 1.295 \\ \times 42 \\ \hline \end{array}$$

15. 
$$\begin{array}{r} 5.55 \\ \times 3.6 \\ \hline \end{array}$$

16. 
$$\begin{array}{r} 0.123 \\ \times 3.4 \\ \hline \end{array}$$

17. 
$$\begin{array}{r} 0.97 \\ \times 18 \\ \hline \end{array}$$

18. 
$$\begin{array}{r} 7.56 \\ \times 0.3 \\ \hline \end{array}$$

19. 
$$\begin{array}{r} 8.112 \\ \times 1.7 \\ \hline \end{array}$$

20. 
$$\begin{array}{r} 1.64 \\ \times 33 \\ \hline \end{array}$$

21. 
$$\begin{array}{r} 0.15 \\ \times 1.5 \\ \hline \end{array}$$

22. 
$$\begin{array}{r} 1.91 \\ \times 0.31 \\ \hline \end{array}$$

23. 
$$\begin{array}{r} 66.11 \\ \times 0.9 \\ \hline \end{array}$$

24. 
$$\begin{array}{r} 1.258 \\ \times 1.4 \\ \hline \end{array}$$

25. 
$$\begin{array}{r} 0.34 \\ \times 69 \\ \hline \end{array}$$

26. 
$$\begin{array}{r} 5.99 \\ \times 15 \\ \hline \end{array}$$

Name \_\_\_\_\_

## Divide Decimals

**Find the quotient.**

1.  $8.12 \div 0.9$

\_\_\_\_\_

2.  $0.765 \div 1.3$

\_\_\_\_\_

3.  $42.05 \div 0.24$

\_\_\_\_\_

4.  $4.97 \div 0.7$

\_\_\_\_\_

5.  $0.228 \div 0.4$

\_\_\_\_\_

6.  $0.08127 \div 0.09$

\_\_\_\_\_

7.  $3.33 \div 5.1$

\_\_\_\_\_

8.  $1.0098 \div 4.2$

\_\_\_\_\_

**Remember:**Move the decimal point in the *divisor* to form a whole-number divisor.Move the decimal point in the *dividend* to the right the *same* number of places.

Write zeros when needed.

Write the decimal point in the quotient directly above the decimal point in the dividend.

Divide as you would with whole numbers.

If you keep getting a remainder, round the quotient.

Name \_\_\_\_\_

**9.**  $9.754 \div 1.5$

**10.**  $13.98 \div 0.02$

**11.**  $0.647 \div 0.16$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**12.**  $5.005 \div 0.25$

**13.**  $24.99 \div 0.3$

**14.**  $95.67 \div 1.8$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**15.**  $0.28 \div 0.8$

**16.**  $1.383 \div 0.27$

**17.**  $9.801 \div 0.14$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

## Zeros in a Product or Quotient

**Multiply.**

1. 
$$\begin{array}{r} 1.093 \\ \times 0.04 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 0.0267 \\ \times 1.01 \\ \hline \end{array}$$

**Remember:**

Sometimes you need to write zeros to the left of nonzero digits in the product in order to place the decimal point correctly.

3. 
$$\begin{array}{r} 0.087 \\ \times 0.023 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 7.9009 \\ \times 0.003 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 0.003 \\ \times 0.99 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 8.012 \\ \times 0.002 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 0.0001 \\ \times 0.07 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 2.15 \\ \times 0.013 \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 21.03 \\ \times 0.004 \\ \hline \end{array}$$

10. 
$$\begin{array}{r} 0.005 \\ \times 1.006 \\ \hline \end{array}$$

11. 
$$\begin{array}{r} 0.008 \\ \times 0.06 \\ \hline \end{array}$$

12. 
$$\begin{array}{r} 6.14 \\ \times 0.006 \\ \hline \end{array}$$

13. 
$$\begin{array}{r} 0.005 \\ \times 2.001 \\ \hline \end{array}$$

14. 
$$\begin{array}{r} 1.175 \\ \times 0.02 \\ \hline \end{array}$$

15. 
$$\begin{array}{r} 0.99 \\ \times 0.006 \\ \hline \end{array}$$

16. 
$$\begin{array}{r} 0.103 \\ \times 0.4 \\ \hline \end{array}$$

17. 
$$\begin{array}{r} 0.07 \\ \times 1.2 \\ \hline \end{array}$$

18. 
$$\begin{array}{r} 3.04 \\ \times 0.01 \\ \hline \end{array}$$

19. 
$$\begin{array}{r} 0.009 \\ \times 3.6 \\ \hline \end{array}$$

20. 
$$\begin{array}{r} 0.005 \\ \times 0.05 \\ \hline \end{array}$$

21. 
$$\begin{array}{r} 32.02 \\ \times 0.003 \\ \hline \end{array}$$

22. 
$$\begin{array}{r} 1.91 \\ \times 0.01 \\ \hline \end{array}$$

23. 
$$\begin{array}{r} 4.007 \\ \times 0.012 \\ \hline \end{array}$$

24. 
$$\begin{array}{r} 1.008 \\ \times 0.003 \\ \hline \end{array}$$

25. 
$$\begin{array}{r} 0.054 \\ \times 0.007 \\ \hline \end{array}$$

26. 
$$\begin{array}{r} 9.098 \\ \times 0.004 \\ \hline \end{array}$$

Name \_\_\_\_\_

**Remember:**

If needed, write one or more zeros *in the quotient* to show the correct place value.

**Divide.**

27.  $2.54 \div 62$

28.  $0.00068 \div 0.02$

29.  $1.834 \div 32$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

30.  $0.015 \div 3$

31.  $5.035 \div 50$

32.  $0.0228 \div 2.4$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

33.  $0.0049 \div 7$

34.  $0.062 \div 32$

35.  $1.0002 \div 16$

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

## Mixed Numbers and Fractions

Rename each mixed number as a fraction.

**Remember:**

Multiply the whole number by the denominator.  
Add the product to the numerator.  
Write the sum as the numerator and the given denominator as the denominator.

1.  $5\frac{2}{7}$

\_\_\_\_\_

2.  $3\frac{1}{8}$

\_\_\_\_\_

3.  $9\frac{3}{5}$

\_\_\_\_\_

4.  $2\frac{1}{5}$

\_\_\_\_\_

5.  $6\frac{7}{11}$

\_\_\_\_\_

6.  $1\frac{8}{9}$

\_\_\_\_\_

7.  $8\frac{4}{7}$

\_\_\_\_\_

8.  $4\frac{9}{13}$

\_\_\_\_\_

9.  $8\frac{1}{3}$

\_\_\_\_\_

10.  $11\frac{4}{5}$

\_\_\_\_\_

11.  $7\frac{12}{15}$

\_\_\_\_\_

12.  $1\frac{9}{16}$

\_\_\_\_\_

13.  $3\frac{2}{3}$

\_\_\_\_\_

14.  $2\frac{1}{6}$

\_\_\_\_\_

15.  $12\frac{1}{4}$

\_\_\_\_\_

16.  $5\frac{3}{8}$

\_\_\_\_\_

17.  $2\frac{11}{14}$

\_\_\_\_\_

18.  $7\frac{1}{2}$

\_\_\_\_\_

19.  $9\frac{1}{4}$

\_\_\_\_\_

20.  $6\frac{2}{3}$

\_\_\_\_\_

21.  $1\frac{1}{17}$

\_\_\_\_\_



Name \_\_\_\_\_

**Rename each fraction as a mixed number.**

22.  $\frac{22}{3}$

\_\_\_\_\_

23.  $\frac{35}{6}$

\_\_\_\_\_

24.  $\frac{13}{2}$

\_\_\_\_\_

25.  $\frac{14}{9}$

\_\_\_\_\_

26.  $\frac{41}{12}$

\_\_\_\_\_

27.  $\frac{16}{6}$

\_\_\_\_\_

28.  $\frac{63}{8}$

\_\_\_\_\_

29.  $\frac{55}{4}$

\_\_\_\_\_

30.  $\frac{24}{7}$

\_\_\_\_\_

31.  $\frac{70}{9}$

\_\_\_\_\_

32.  $\frac{19}{3}$

\_\_\_\_\_

33.  $\frac{37}{3}$

\_\_\_\_\_

34.  $\frac{62}{11}$

\_\_\_\_\_

35.  $\frac{14}{5}$

\_\_\_\_\_

**Remember:**

Divide the numerator by the denominator.

Write the quotient as the whole number part.

If there is a remainder, write it over the denominator and express the fraction in simplest form.

Name \_\_\_\_\_

## Add and Subtract Fractions

**Add.**

1.  $\frac{4}{9} + \frac{3}{4} + \frac{1}{2}$

2.  $\frac{1}{5} + \frac{12}{15} + \frac{1}{3}$

**Remember:**

Find the least common denominator (LCD) of the fractions.

Rename each fraction as an equivalent fraction with the LCD as the denominator.

Add. Express the sum in simplest form.

3.  $\frac{1}{7} + \frac{2}{3} + \frac{6}{21}$

4.  $\frac{5}{8} + \frac{9}{12} + \frac{2}{3}$

5.  $\frac{11}{15} + \frac{7}{10} + \frac{1}{3}$

6.  $\frac{1}{9} + \frac{5}{6} + \frac{2}{3}$

7.  $\frac{11}{20} + \frac{9}{10} + \frac{3}{4}$

8.  $\frac{1}{7} + \frac{2}{5} + \frac{1}{10}$

9.  $\frac{7}{12} + \frac{1}{4} + \frac{5}{6}$

10.  $\frac{13}{14} + \frac{3}{7} + \frac{1}{2}$

11.  $\frac{5}{6} + \frac{15}{18} + \frac{8}{9}$

Name \_\_\_\_\_

**Subtract.**

12.  $\frac{3}{4} - \frac{2}{3}$

\_\_\_\_\_

13.  $\frac{4}{5} - \frac{1}{2}$

\_\_\_\_\_

**Remember:**

Find the least common denominator (LCD) of the fractions.

Rename each fraction as an equivalent fraction with the LCD as the denominator. Subtract. Express the difference in simplest form.

14.  $\frac{5}{12} - \frac{1}{6}$

\_\_\_\_\_

15.  $\frac{1}{2} - \frac{1}{3}$

\_\_\_\_\_

16.  $\frac{2}{3} - \frac{1}{5}$

\_\_\_\_\_

17.  $\frac{7}{8} - \frac{1}{4}$

\_\_\_\_\_

18.  $\frac{11}{13} - \frac{1}{2}$

\_\_\_\_\_

19.  $\frac{4}{7} - \frac{1}{8}$

\_\_\_\_\_

20.  $\frac{2}{5} - \frac{2}{7}$

\_\_\_\_\_

21.  $\frac{1}{3} - \frac{1}{5}$

\_\_\_\_\_

22.  $\frac{9}{10} - \frac{1}{5}$

\_\_\_\_\_

23.  $\frac{1}{3} - \frac{1}{8}$

\_\_\_\_\_

24.  $\frac{1}{2} - \frac{1}{4}$

\_\_\_\_\_

25.  $\frac{6}{9} - \frac{1}{3}$

\_\_\_\_\_

Name \_\_\_\_\_

## Multiply and Divide Fractions

**Multiply.**

1.  $\frac{3}{5} \times \frac{1}{3}$  \_\_\_\_\_

2.  $\frac{2}{7} \times \frac{1}{2}$  \_\_\_\_\_

3.  $\frac{11}{13} \times \frac{3}{5}$  \_\_\_\_\_

4.  $\frac{1}{5} \times \frac{1}{8}$  \_\_\_\_\_

5.  $\frac{3}{8} \times \frac{2}{3}$  \_\_\_\_\_

6.  $\frac{3}{7} \times \frac{2}{3}$  \_\_\_\_\_

7.  $\frac{4}{9} \times \frac{5}{6}$  \_\_\_\_\_

8.  $\frac{1}{7} \times \frac{1}{7}$  \_\_\_\_\_

9.  $\frac{8}{12} \times \frac{1}{3}$  \_\_\_\_\_

10.  $\frac{4}{11} \times \frac{1}{2}$  \_\_\_\_\_

11.  $\frac{2}{9} \times \frac{2}{3}$  \_\_\_\_\_

12.  $\frac{1}{5} \times \frac{1}{4}$  \_\_\_\_\_

13.  $\frac{1}{7} \times \frac{1}{8}$  \_\_\_\_\_

14.  $\frac{1}{3} \times \frac{1}{4}$  \_\_\_\_\_

**Multiply using the greatest common factor (GCF).**

15.  $\frac{\cancel{2}}{7} \times \frac{\cancel{14}}{\cancel{15}}$  \_\_\_\_\_

16.  $\frac{\cancel{6}}{\cancel{10}} \times \frac{\cancel{2}}{\cancel{4}}$  \_\_\_\_\_

17.  $\frac{1}{\cancel{8}} \times \frac{\cancel{2}}{5}$  \_\_\_\_\_

18.  $\frac{1}{\cancel{15}} \times \frac{\cancel{5}}{8}$  \_\_\_\_\_

19.  $\frac{1}{\cancel{12}} \times \frac{\cancel{4}}{5}$  \_\_\_\_\_

20.  $\frac{\cancel{8}}{9} \times \frac{1}{\cancel{4}}$  \_\_\_\_\_

21.  $\frac{\cancel{5}}{\cancel{10}} \times \frac{\cancel{2}}{4}$  \_\_\_\_\_

22.  $\frac{\cancel{22}}{31} \times \frac{1}{\cancel{2}}$  \_\_\_\_\_

23.  $\frac{4}{\cancel{10}} \times \frac{\cancel{2}}{3}$  \_\_\_\_\_

24.  $\frac{\cancel{6}}{\cancel{14}} \times \frac{\cancel{7}}{\cancel{8}}$  \_\_\_\_\_

25.  $\frac{\cancel{2}}{5} \times \frac{1}{\cancel{4}}$  \_\_\_\_\_

26.  $\frac{4}{\cancel{8}} \times \frac{\cancel{2}}{5}$  \_\_\_\_\_

27.  $\frac{\cancel{6}}{13} \times \frac{25}{\cancel{6}}$  \_\_\_\_\_

28.  $\frac{\cancel{2}}{5} \times \frac{1}{\cancel{4}}$  \_\_\_\_\_

**Remember:**

Multiply the numerators. Then multiply the denominators. Write the product in simplest form.

**Remember:**

Divide any numerator and denominator by the greatest common factor (GCF). Multiply the numerators. Then multiply the denominators. The product will be in simplest form.

Name \_\_\_\_\_

**Divide.**

29.  $\frac{3}{8} \div \frac{3}{5}$

30.  $\frac{1}{6} \div \frac{12}{13}$

**Remember:**

Multiply by the reciprocal of the divisor. Simplify using the GCF, where possible. Then multiply the numerators and the denominators.

Rename the product as a whole or mixed number when needed.

31.  $\frac{2}{4} \div \frac{3}{6}$

32.  $\frac{2}{3} \div \frac{1}{6}$

33.  $\frac{4}{5} \div \frac{12}{5}$

34.  $\frac{2}{9} \div \frac{2}{8}$

35.  $\frac{4}{9} \div \frac{5}{3}$

36.  $\frac{15}{17} \div \frac{5}{1}$

37.  $\frac{3}{8} \div \frac{15}{8}$

38.  $\frac{6}{7} \div \frac{2}{3}$

39.  $\frac{1}{9} \div \frac{5}{7}$

40.  $\frac{5}{9} \div \frac{1}{5}$

41.  $\frac{1}{2} \div \frac{7}{8}$

42.  $\frac{6}{9} \div \frac{3}{2}$

43.  $\frac{4}{7} \div \frac{8}{21}$

44.  $\frac{3}{8} \div \frac{4}{16}$

45.  $\frac{5}{6} \div \frac{10}{13}$

Name \_\_\_\_\_

## Metric System of Measurement

Multiply or divide to rename each unit of measurement.

1.  $3 \text{ m} = ? \text{ cm}$

\_\_\_\_\_

2.  $1500 \text{ mL} = ? \text{ L}$

\_\_\_\_\_

3.  $3000 \text{ g} = ? \text{ kg}$

\_\_\_\_\_

5.  $1.2 \text{ kg} = ? \text{ g}$

\_\_\_\_\_

7.  $2.4 \text{ L} = ? \text{ mL}$

\_\_\_\_\_

9.  $5 \text{ L} = ? \text{ kL}$

\_\_\_\_\_

11.  $83 \text{ m} = ? \text{ km}$

\_\_\_\_\_

13.  $2.2 \text{ kL} = ? \text{ L}$

\_\_\_\_\_

15.  $6 \text{ g} = ? \text{ mg}$

\_\_\_\_\_

17.  $700 \text{ L} = ? \text{ kL}$

\_\_\_\_\_

19.  $85 \text{ m} = ? \text{ km}$

\_\_\_\_\_

21.  $3.6 \text{ m} = ? \text{ mm}$

\_\_\_\_\_

23.  $810 \text{ cg} = ? \text{ g}$

\_\_\_\_\_

4.  $360 \text{ cm} = ? \text{ m}$

\_\_\_\_\_

6.  $8700 \text{ kL} = ? \text{ L}$

\_\_\_\_\_

8.  $25 \text{ km} = ? \text{ m}$

\_\_\_\_\_

10.  $75 \text{ cm} = ? \text{ m}$

\_\_\_\_\_

12.  $20 \text{ g} = ? \text{ mg}$

\_\_\_\_\_

14.  $150 \text{ mm} = ? \text{ m}$

\_\_\_\_\_

16.  $4000 \text{ mg} = ? \text{ g}$

\_\_\_\_\_

18.  $590 \text{ kg} = ? \text{ g}$

\_\_\_\_\_

20.  $9 \text{ g} = ? \text{ cg}$

\_\_\_\_\_

22.  $11 \text{ L} = ? \text{ mL}$

\_\_\_\_\_

24.  $10 \text{ dL} = ? \text{ L}$

\_\_\_\_\_

**Remember:**

*Multiply* by a power of 10 to rename larger units as smaller units.

*Divide* by a power of 10 to rename smaller units as larger units.

Name \_\_\_\_\_

## Customary System of Measurement

Multiply or divide to rename units of measurement.

1.  $4 \text{ mi} = \underline{\quad} \text{ yd}$

\_\_\_\_\_

2.  $27 \text{ gal} = \underline{\quad} \text{ qt}$

\_\_\_\_\_

3.  $8800 \text{ yd} = \underline{\quad} \text{ mi}$

\_\_\_\_\_

5.  $72 \text{ in.} = \underline{\quad} \text{ ft}$

\_\_\_\_\_

7.  $36 \text{ oz} = \underline{\quad} \text{ lb}$

\_\_\_\_\_

9.  $36 \text{ qt} = \underline{\quad} \text{ gal}$

\_\_\_\_\_

**Remember:**

*Multiply* to rename larger units as smaller units.  
*Divide* to rename smaller units as larger units.  
You can *add*, *subtract*, or *multiply* measures.

4.  $120 \text{ qt} = \underline{\quad} \text{ gal}$

\_\_\_\_\_

6.  $6 \text{ lb} = \underline{\quad} \text{ oz}$

\_\_\_\_\_

8.  $2 \text{ mi} = \underline{\quad} \text{ yd}$

\_\_\_\_\_

10.  $8 \text{ ft} = \underline{\quad} \text{ in.}$

\_\_\_\_\_

**Add.**

11.

$$\begin{array}{r} 2 \text{ ft } 3 \text{ in.} \\ +3 \text{ ft } 14 \text{ in.} \\ \hline \end{array}$$

\_\_\_\_\_

12.

$$\begin{array}{r} 4 \text{ cup } 11 \text{ fl oz} \\ +1 \text{ cup } 3 \text{ fl oz} \\ \hline \end{array}$$

\_\_\_\_\_

13.

$$\begin{array}{r} 7 \text{ gal } 1 \text{ qt} \\ +4 \text{ gal } 5 \text{ qt} \\ \hline \end{array}$$

\_\_\_\_\_

14.

$$\begin{array}{r} 5 \text{ ft } 8 \text{ in.} \\ +9 \text{ ft } 8 \text{ in.} \\ \hline \end{array}$$

\_\_\_\_\_

15.

$$\begin{array}{r} 3 \text{ lb } 14 \text{ oz} \\ +3 \text{ lb } 10 \text{ oz} \\ \hline \end{array}$$

\_\_\_\_\_

16.

$$\begin{array}{r} 7 \text{ gal } 12 \text{ qt} \\ +6 \text{ gal } 12 \text{ qt} \\ \hline \end{array}$$

\_\_\_\_\_

17.

$$\begin{array}{r} 8 \text{ qt } 5 \text{ pt} \\ +2 \text{ qt } 2 \text{ pt} \\ \hline \end{array}$$

\_\_\_\_\_

18.

$$\begin{array}{r} 1 \text{ lb } 2 \text{ oz} \\ +3 \text{ lb } 18 \text{ oz} \\ \hline \end{array}$$

\_\_\_\_\_