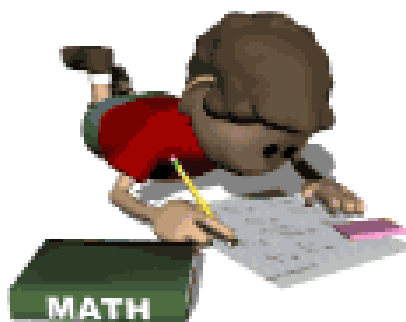


Name: \_\_\_\_\_

# General Math / Pre-Algebra: Summer Packet



## Instructions:

This packet is a compilation of important mathematical concepts that you are expected to know prior to entering General Math / Pre-Algebra. These examples focus on both mathematical skills and problem solving. You may have learned some of these concepts several years ago. Therefore, you may look back and use other resources (old notes, math books, web pages, etc.) to complete this packet. This packet should be completed independently and your parent or guardian needs to sign off on this page upon your completion of this packet. This packet will be due at the beginning of the school year. Calculators may be used, but work must be shown for full credit. Please put all answers on the sheet provided. You will be assessed on this material at the beginning of the school year. Good luck!

Parent/Guardian Signature: \_\_\_\_\_

# NUMBER SENSE WITH WHOLE NUMBERS, MONEY AND DECIMALS

Name the place value of the 5 in each number.

1.) 13,560 \_\_\_\_\_

2.) 345,000,000 \_\_\_\_\_

3.) \$105.00 \_\_\_\_\_

4.) 156.407 \_\_\_\_\_

5.) 4.951 \_\_\_\_\_

Please mark either  $<$  or  $>$ . Remember that the larger number is on the open side.

Example...  $2 \_\_\_ 0$  Answer...  $2 > 0$

6.)  $3 \_\_\_ 9$

7.)  $723 \_\_\_ 781$

8.)  $\$45 \_\_\_ \$38.92$

9.)  $10.33 \_\_\_ 963$

Compute without a calculator. Please show all work. Watch the signs!

10.)  $4 + 6 = \underline{\hspace{2cm}}$

11.)  $12 + 73 = \underline{\hspace{2cm}}$

12.)  $21 + 0 = \underline{\hspace{2cm}}$

13.)  $3 + 61 + 188 = \underline{\hspace{2cm}}$

14.)  $832 + 7390 = \underline{\hspace{2cm}}$

15.)  $8 - 2 =$  \_\_\_\_\_

16.)  $27 - 11 =$  \_\_\_\_\_

17.)  $345 - 90 =$  \_\_\_\_\_

18.)  $888 - 692 =$  \_\_\_\_\_

19.)  $5 \times 4 =$  \_\_\_\_\_

20.)  $23 \times 73 =$  \_\_\_\_\_

21.)  $12 \div 3 =$  \_\_\_\_\_

22.)  $70 \div 10 =$  \_\_\_\_\_

23.)  $3 \times 2 + 6 =$  \_\_\_\_\_

24.)  $6 + 3 \times 2 =$  \_\_\_\_\_

25.)  $8.4 + 4.3 =$  \_\_\_\_\_

26.)  $43.1 + .4 =$  \_\_\_\_\_

27.)  $27.3 - 13.1 =$  \_\_\_\_\_

28.)  $24.5 \times 2 =$  \_\_\_\_\_

29.)  $63.3 \div 3 =$  \_\_\_\_\_

30.) Napoleon Dynamite found a date to go to the prom with him. He needs to buy two tickets at \$46 each, a corsage for \$15.99, gasoline for his car will cost \$18.30, and his tux rental will be \$82. How much will it cost Napoleon altogether? \_\_\_\_\_

### **CONSUMER PROBLEMS WITH MONEY AND TIME.**

**Please show all of your work and label your answers.**

31.) Jessica went to work at 8:30 am and left work at 2:00 pm. She ate lunch during her unpaid  $\frac{1}{2}$  hour break. How many hours did she work and get paid for?

\_\_\_\_\_

32.) Sam had a bank account that paid a tiny .3% interest rate. If he had \$1000 at the beginning of the year and assuming interest was compounded only once at the end, how much would Sam have at the end of the year?

\_\_\_\_\_

33.) Herby saved and saved and saved his money until he was able to afford an Ipod. It cost \$150 plus 6% sales tax. How much did this cost Herby altogether?

\_\_\_\_\_

34.) Linda and Louie went to Lassie's Restaurant. Two lasagna lunches, two low-fat milks, and lots of ice cream for dessert cost these lovebirds \$22.00 including tax. If they gave a generous 20% tip on the entire amount what is their total cost?

\_\_\_\_\_

35.) Oliver earns \$10 per hour. He worked the following number of hours in each of his first 4 weeks of work. When he worked over 40 hours, he earned double pay per the overtime hours. Please find out his total earnings per week and his total pay for the month.

| Week | Total Hours | Total Pay for the Week |
|------|-------------|------------------------|
| 1    | 32          | _____                  |
| 2    | 40          | _____                  |
| 3    | 42          | _____                  |
| 4    | 50          | _____                  |

Total pay for the month \_\_\_\_\_

36.) Rosie needed to buy school supplies. She spent \$26.50 on a backpack, \$16.75 on notebooks and binders, and \$3.30 on a stapler. Karen bought herself a pocketbook for \$55.00. How much did Rosie spend on school supplies before figuring the sales tax?

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37.) Donna drives for 30 minutes to and from work every day. During her 5 day work week she spends how much time in her car?

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38.) Sally bought a movie ticket for \$9.50. She gave the cashier a \$20 bill. What should Sally receive back?

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39.) Connie's Corvette only gets 8 miles per gallon (MPG). If she travels from CT to Florida (about 1200 miles one way) and back, about how many gallons of gasoline did she use?

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40.) Bob's usually sells sneakers for \$60.00 per pair. If they are on sale at 10 percent off plus 6 percent sales tax, how much would they cost altogether if you bought them on sale today?

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# FRACTIONS

## Comparing Fractions

Example:  $\frac{3}{8}$  \_\_\_\_\_  $\frac{1}{3}$

Common denominator is 24.

$$\frac{3}{8} \times \frac{3}{3} \text{ _____ } \frac{1}{3} \times \frac{8}{8}$$

$$\frac{9}{24} \text{ _____ } \frac{8}{24}$$

$$\frac{9}{24} > \frac{8}{24}$$

Compare the following fractions.

41.)  $\frac{2}{12}$  \_\_\_\_\_  $\frac{5}{12}$

42.)  $\frac{3}{5}$  \_\_\_\_\_  $\frac{6}{10}$

43.)  $\frac{3}{4}$  \_\_\_\_\_  $\frac{3}{5}$

## Improper and Mixed Numbers

Change the following mixed numbers to improper fractions.

Example:  $6\frac{2}{3} = \frac{6 \times 3 + 2}{3} = \frac{20}{3}$

44.)  $5\frac{1}{3}$

45.)  $3\frac{5}{6}$

46.)  $1\frac{3}{7}$

**Change the following improper fractions to mixed numbers. Answer should be in lowest terms.**

Example:  $\frac{22}{3}$

Now, 3 divides into 22 evenly 7 times.  $7 \times 3 = 21$  Then ask how many left? From 21 to 22, there is one left. So  $7\frac{1}{3}$  is the answer. Check also by going backwards.

47.)  $\frac{31}{5}$

48.)  $\frac{19}{6}$

49.)  $\frac{40}{3}$

### **Adding Fractions**

**Add the following fractions. Answer should be in lowest terms.**

Example:

$$\frac{3}{8} + \frac{5}{6} = \frac{3}{8} \times \frac{6}{6} + \frac{5}{6} \times \frac{8}{8} = \frac{18}{48} + \frac{40}{48} = \frac{58}{48} = \text{Answer but not in lowest terms.}$$

$$\text{Simplify. } \frac{58 \div 2}{48 \div 2} = \frac{29}{24} = 1\frac{5}{24}$$

50.)  $\frac{3}{7} + \frac{2}{7}$

51.)  $\frac{1}{3} + \frac{7}{12}$

52.)  $\frac{7}{9} + \frac{5}{6}$

## Subtracting Fractions

Subtract the following fractions. Answer should be in lowest terms.

Example:

$$\frac{7}{8} - \frac{3}{5} = \frac{7}{8} \times \frac{5}{5} + \frac{3}{5} \times \frac{8}{8} = \frac{35}{40} + \frac{24}{40} = \frac{59}{40} = \text{Answer but not in lowest terms.}$$

Simplify.  $1\frac{19}{40}$

53.)  $\frac{9}{20} - \frac{2}{20} =$

54.)  $\frac{2}{3} - \frac{1}{4} =$

55.)  $\frac{8}{9} - \frac{3}{4} =$

Rename each fraction to a decimal.

Example:

$$\frac{1}{2} = 1 \div 2 = 0.5$$

56.)  $\frac{1}{4} =$  \_\_\_\_\_

57.)  $\frac{5}{10} =$  \_\_\_\_\_

58.)  $3\frac{1}{4} =$  \_\_\_\_\_

**Rename each percent to a decimal.**

Example:

$$35\% = \frac{35}{100} = .35$$

59.)  $93\% = \underline{\hspace{2cm}}$

60.)  $7\% = \underline{\hspace{2cm}}$

61.)  $160\% = \underline{\hspace{2cm}}$

**Rename each fraction to a percent.**

Example:

$$\frac{1}{2} = 1 \div 2 = 0.50 = 50\%$$

62.)  $\frac{4}{5} = \underline{\hspace{2cm}}$

63.)  $\frac{1}{10} = \underline{\hspace{2cm}}$

64.)  $\frac{8}{15} = \underline{\hspace{2cm}}$

**Rename each decimal to a fraction.**

Example:

$$0.34 = \frac{34}{100} = \frac{17}{50}$$

65.)  $0.25 = \underline{\hspace{2cm}}$

66.)  $0.9 = \underline{\hspace{2cm}}$

67.)  $0.85 = \underline{\hspace{2cm}}$

**Rename each decimal to a percent.**

Example:

$.4321 = 43.21\%$  Move the decimal point two places to the right

68.)  $0.31 = \underline{\hspace{1cm}}\%$

69.)  $0.4565 = \underline{\hspace{1cm}}\%$

70.)  $3.25 = \underline{\hspace{1cm}}\%$

**Rename each percent to a fraction in simplest form.**

Example:

$$9\% = \frac{9}{100}$$

71.)  $2\% = \underline{\hspace{2cm}}$

72.)  $33\% = \underline{\hspace{2cm}}$

73.)  $25\% = \underline{\hspace{2cm}}$

**Multiplying Fractions: Write the answer in lowest terms.**

Example:

$$\frac{3}{4} \times \frac{4}{5} = \frac{12}{20} = \frac{\div 4}{\div 4} = \frac{3}{5} \text{ or cross simplify.}$$

74.)  $\frac{1}{5} \times \frac{1}{3} =$  \_\_\_\_\_

75.)  $\frac{5}{8} \times \frac{1}{6} =$  \_\_\_\_\_

76.)  $\frac{7}{8} \times \frac{6}{7} =$  \_\_\_\_\_

77.)  $1\frac{1}{3} \times 2\frac{1}{2} =$  \_\_\_\_\_

**Dividing Fractions: Write the answer in lowest terms.**

Example:

$$\frac{2}{3} \div \frac{1}{2} = \frac{2}{3} \times \frac{2}{1} = \frac{4}{3} = 1\frac{1}{3}$$

78.)  $\frac{8}{9} \div \frac{4}{9} =$  \_\_\_\_\_

79.)  $\frac{5}{6} \div \frac{1}{4} =$  \_\_\_\_\_

80.)  $\frac{1}{3} \div 6 =$  \_\_\_\_\_

## Mean, Median and Mode

**Find the mean (average) of the following numbers.**

Find the average of the following numbers 12, 24, 7, and 35.

$$\frac{12 + 24 + 7 + 13}{4} = \frac{56}{4} = 14$$

81.) 53, 24, 87, 36

82.) 12, 36, 6

83.) 74, 35, 14, 25, 41

**Find the mode and median of the following numbers.**

*Mode is the most often number in a list.*

*Median is the middle number written from least to greatest. If there are two numbers in the middle, take the average of the two numbers for your median.*

Example:

7, 2, 5, 3, 4, 6, 5, 2, 4, 9, 8, 7, 3, 4

First write in order.

2, 2, 3, 3, 4, 4, 4, 5, 5, 6, 7, 7, 8, 9

Mode = 4

$$\text{Median} = \frac{4 + 5}{2} = 4.5$$

84.) 6, 4, 2, 7, 8, 4, 7, 5, 3, 2, 7, 8, 9, 4, 3, 6, 7

Mode: \_\_\_\_\_

Median: \_\_\_\_\_

85.) 12, 10, 2, 5, 7, 6, 10, 21, 14, 10

Mode: \_\_\_\_\_

Median: \_\_\_\_\_

86.) 20, 30, 41, 20, 62, 10, 2, 5, 3

Mode: \_\_\_\_\_

Median: \_\_\_\_\_

## Solving One-step Equations

Solve the following equations for the given variable. You may complete the following problems in your head.

Example:

$$x + 5 = 20$$

$$\underline{15} + 5 = 20$$

So, the answer (or missing number) is 15.

87.)  $x + 3 = 15$

88.)  $x - 5 = 8$

89.)  $3x = 12$

90.)  $9x = 45$

91.)  $3x = 12$

92.)  $\frac{1}{2}x = 7$

93.)  $\frac{x}{7} = 5$

94.)  $\frac{x}{25} = 6$

95.)  $\frac{3}{4}x = 9$

