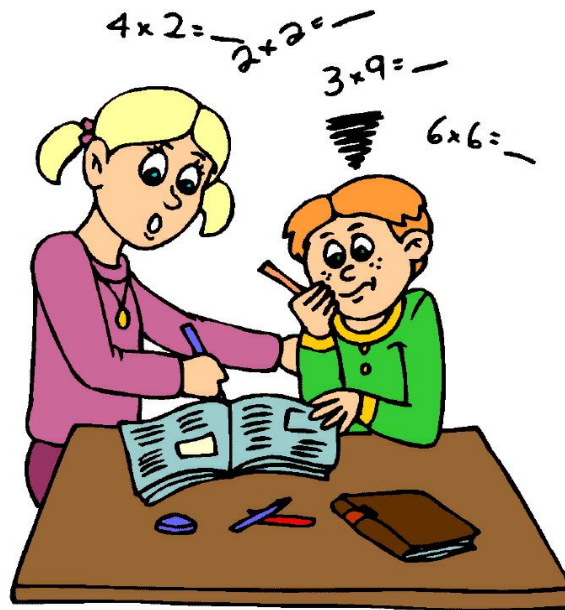


**Peotone Junior
High School
8th grade
Summer Math Packet**



Summer Math Packet

This math review was written so that each student could first read and study the explanations and the examples of each of the math topics. Then, complete the set of practice problems. A completion list is provided below. The work for each problem is to be shown on the practice sheet. If there is not enough room, additional notebook paper will need to be used.

	Completed (X)
1. Multiply Whole Numbers	_____
2. Divide Whole Numbers	_____
3. Add/Subtract Fractions	_____
4. Multiply Fractions	_____
5. Divide Fractions	_____
6. Add/Subtract Decimals	_____
7. Multiply Decimals	_____
8. Divide Decimals	_____
9. Add/Subtract Integers	_____
10. Multiply /Divide Integers	_____
11. Solve 1-Step Equations	_____
12. Solve 2-Step Equations	_____

Multiplication of Whole Numbers

When numbers are multiplied, each number is called a *factor*. The result of multiplying numbers is called a *product*.

$$\begin{array}{r} 5 \text{ -----factor} \\ \times 5 \text{ -----factor} \\ \hline 10 \text{ -----product} \end{array}$$

Example: $46 \times 37 =$

$$\begin{array}{r} \overset{1}{4} \\ 46 \\ \times 37 \\ \hline \overset{1}{3}22 \\ + 1380 \\ \hline 1702 \end{array}$$

Step 1. Multiply the ones digits $(7)(6)=42$. Place the 2 under the 7 and carry the 4.

Step 2. Multiply $(7)(4)=28$ and then add the number you carried. (in this example 4).

Step 3. Write down a 0 in the ones place.

Step 4. Multiply $(3)(6)=18$. Place 8 beside the 0 and carry 1.

Step 5. Multiply $(3)(4)=12$ and add the 1 that was carried.

Step 6. Add the partial products.

$$322 + 1380 = 1702$$

Multiplying Whole Numbers

$$\begin{array}{r} 1. \quad 372 \\ \times \quad 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 58 \\ \times 21 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 137 \\ \times 23 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 75 \\ \times 36 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 208 \\ \times 9 \\ \hline \end{array}$$

$$6. \quad 47 \times 65 =$$

$$7. \quad 272 \times 13 =$$

$$8. \quad 109 \times 387 =$$

Division of Whole Numbers

$$\begin{array}{r} \text{Quotient} \\ \text{Divisor} \overline{) \text{Dividend}} \end{array}$$

$$\text{Dividend} \div \text{Divisor} = \text{Quotient}$$

- 1) Division needs to be done using straight columns.
- 2) Each difference (subtraction answer) must be smaller than the divisor.
- 3) Some answers have remainders.

Example: $4365 \div 15 =$

$$\begin{array}{r} 291 \\ 15 \overline{) 4365} \\ \underline{-30} \downarrow \\ 136 \downarrow \\ \underline{-135} \downarrow \\ 15 \\ \underline{-15} \\ \hline 0 \end{array}$$

$362 \div 4$

$$\begin{array}{r} 90 \text{ r } 2 \\ 4 \overline{) 362} \\ \underline{-36} \downarrow \\ 2 \\ \underline{-0} \\ \hline 2 \end{array}$$

$10416 \div 8$

$$\begin{array}{r} 1302 \\ 8 \overline{) 10416} \\ \underline{-8} \downarrow \\ 24 \\ \underline{-24} \downarrow \\ \hline 1 \downarrow \\ \underline{-0} \\ 16 \\ \underline{-16} \\ \hline 0 \end{array}$$

Division of Whole Numbers

1. $4758 \div 25$

$$25 \overline{)4758}$$

2. $5868 \div 40$

$$40 \overline{)5868}$$

3. $4073 \div 36$

$$36 \overline{)4073}$$

4. $4929 \div 27$

$$\overline{)4929}$$

5. $6189 \div 36$

$$\overline{)6189}$$

6. $10466 \div 49$

$$\overline{)10466}$$

Fractions (+, -)

ALL fractions need Common Denominators.

ALL answers need to be in lowest terms or turn into a mixed number, if possible.

Add

1. Common Denominators.
2. Choose method for Mixed Numbers (Ex C).

Examples

$$\begin{array}{r}
 \text{a) } \frac{1}{2} = \frac{2}{4} \\
 + \frac{3}{4} = \frac{3}{4} \\
 \hline
 \frac{5}{4} = 1\frac{1}{4}
 \end{array}
 \qquad
 \begin{array}{r}
 \text{b) } \frac{5}{9} = \frac{10}{18} \\
 + \frac{1}{6} = \frac{3}{18} \\
 \hline
 \frac{13}{18}
 \end{array}
 \qquad
 \begin{array}{r}
 \text{c) } 6\frac{5}{8} = 6\frac{15}{24} \\
 + 4\frac{1}{3} = 4\frac{8}{24} \\
 \hline
 10\frac{23}{24}
 \end{array}
 \qquad
 \text{or}
 \qquad
 \begin{array}{r}
 6\frac{5}{8} = 6\frac{15}{24} = \frac{159}{24} \\
 + 4\frac{1}{3} = 4\frac{8}{24} = \frac{104}{24} \\
 \hline
 \frac{263}{24} = 10\frac{23}{24}
 \end{array}$$

Subtract

1. The bigger number must be at the top.
2. Common Denominators.
3. Choose method for mixed numbers (Ex b,c,&d).

$$\begin{array}{r}
 \text{a) } \frac{3}{4} = \frac{3}{4} \\
 - \frac{1}{2} = \frac{2}{4} \\
 \hline
 \frac{1}{4}
 \end{array}
 \qquad
 \begin{array}{r}
 \text{b) } 6 = 5\frac{3}{3} \\
 - 4\frac{2}{3} = 4\frac{2}{3} \\
 \hline
 1\frac{1}{3}
 \end{array}
 \qquad
 \begin{array}{r}
 \text{c) } 6\frac{3}{4} = 6\frac{9}{12} \\
 - 3\frac{1}{3} = 3\frac{4}{12} \\
 \hline
 3\frac{5}{12}
 \end{array}
 \qquad
 \begin{array}{r}
 \text{d) } 4\frac{3}{4} = 4\frac{6}{8} = 3\frac{14}{8} \\
 - 2\frac{7}{8} = 2\frac{7}{8} = 2\frac{7}{8} \\
 \hline
 1\frac{7}{8}
 \end{array}$$

$$\begin{array}{r}
 \text{b) } 6 = \frac{18}{3} \\
 - 4\frac{2}{3} = \frac{14}{3} \\
 \hline
 \frac{4}{3} = 1\frac{1}{3}
 \end{array}
 \qquad
 \begin{array}{r}
 \text{c) } 6\frac{3}{4} = 6\frac{9}{12} = \frac{81}{12} \\
 - 3\frac{1}{3} = 3\frac{4}{12} = \frac{40}{12} \\
 \hline
 \frac{41}{12} = 3\frac{5}{12}
 \end{array}
 \qquad
 \begin{array}{r}
 \text{d) } 4\frac{3}{4} = 4\frac{6}{8} = \frac{38}{8} \\
 - 2\frac{7}{8} = 2\frac{7}{8} = \frac{23}{8} \\
 \hline
 \frac{15}{8} = 1\frac{7}{8}
 \end{array}$$

Fractions (+, -)

1. $\frac{2}{3} + \frac{1}{6} =$

7. $\frac{3}{4} - \frac{9}{16} =$

2. $1\frac{9}{16} + \frac{3}{4} =$

8. $2 - 1\frac{5}{7} =$

3. $3\frac{5}{6} + 2\frac{3}{4} =$

9. $2\frac{4}{5} - 1\frac{1}{2} =$

4. $\frac{3}{4} + \frac{5}{6} =$

10. $\frac{8}{9} - \frac{5}{6} =$

5. $5\frac{7}{8} + 3\frac{5}{12} =$

11. $6\frac{3}{4} - 2\frac{4}{5} =$

6. $6 + 2\frac{2}{3} =$

12. $10\frac{5}{7} - 3\frac{3}{14} =$

Multiplying Fractions

$$5\frac{1}{3} \times \frac{2}{4}$$

$$5 \times 3 = 15 + 1 = 16$$

$$\frac{16}{3} \times \frac{2}{4} =$$

$$\frac{16 \div 4 = 4}{3} \times \frac{2}{4 \div 4 = 1}$$

$$\frac{4}{3} \times \frac{2}{1} = \frac{8}{3}$$

$$\begin{array}{r} 8 \\ 3 \overline{) 8} \\ \underline{-6} \\ 2 \end{array}$$

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

1. Change all mixed numbers to improper fraction by multiplying the denominator by the whole number then adding the numerator.

2. Simplify by cross-reducing if possible. See if you can divide the numbers diagonal from each other by the same number. In this case 16 and 4 can both be divided by 4.

3. Multiply numerators.

4. Reduce fraction or turn into a mixed number if possible.

Examples:

$$1a) \frac{7}{8} \times \frac{3}{5} = \frac{21}{40}$$

$$1b) 2\frac{2}{5} \times 1\frac{3}{4} =$$

$$\frac{12 \div 4 = 3}{5} \times \frac{7}{4 \div 4 = 1} = \frac{21}{5}$$

$$5 \overline{) 21} = 4\frac{1}{5}$$

$$\begin{array}{r} -20 \\ \hline 1 \end{array}$$

$$1c) 3\frac{7}{8} \times 4 = \text{(put the whole number over 1)}$$

$$\frac{31}{2\cancel{8}} \times \frac{4}{1} = \frac{31}{2}$$

$$2 \overline{) 31} = 15\frac{1}{2}$$

$$\begin{array}{r} -2\downarrow \\ \hline 11 \end{array}$$

$$\begin{array}{r} -10 \\ \hline 1 \end{array}$$

Multiplying Fractions

1. $\frac{3}{4} \times \frac{3}{5} =$

2. $\frac{3}{10} \times \frac{2}{15} =$

3. $\frac{9}{10} \times \frac{1}{3} =$

4. $\frac{3}{5} \times 5 =$

5. $6\frac{1}{4} \times 7 =$

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

7. $3\frac{4}{5} \times 2\frac{1}{3} =$

8. $\frac{1}{4} \times \frac{5}{20} =$

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

10. $\frac{3}{5} \times 2\frac{3}{4} =$

11. $1\frac{3}{4} \times 2\frac{1}{5} =$

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

Dividing Fractions

Example: $30 \div 2\frac{1}{2}$

1. Change all mixed or whole numbers to improper fractions.

$$\frac{30}{1} \div \frac{5}{2}$$

2. Leave, Change, Opposite (LCO)

- a) Leave the first fraction alone.
- b) Change division to multiplication.
- c) Find the reciprocal of the 2nd fraction (flip it).

$$\frac{30}{1} \times \frac{2}{5} =$$

3. Cross reduce if possible.

$$\frac{\cancel{6}3\cancel{0}}{1} \times \frac{2}{\cancel{5}1}$$

4. Multiply numerators.

Multiply denominators.

$$\frac{6}{1} \times \frac{2}{1} = \frac{12}{1}$$

5. Put fractions in lowest terms or turn to a mixed number if possible.

$$\frac{12}{1} = 12$$

1a) $\frac{2}{3} \div \frac{1}{6}$

1b) $9\frac{3}{5} \div 3$

1c) $3\frac{3}{4} \div 2\frac{1}{9}$

$$\frac{2}{\cancel{1}3} \times \frac{\cancel{6}2}{1} = \frac{4}{1} = 4$$

$$\frac{\cancel{16}16}{5} \times \frac{1}{\cancel{5}1} = \frac{16}{5}$$

$$\frac{15}{4} \div \frac{19}{9}$$

$$5 \overline{)16}^3 = 3\frac{1}{5}$$

$$\begin{array}{r} 3 \\ 5 \overline{)16} \\ \underline{-15} \\ 1 \end{array}$$

$$\frac{15}{4} \times \frac{9}{19} = \frac{135}{76}$$

$$76 \overline{)135}^1 = 1\frac{59}{76}$$

$$\begin{array}{r} 1 \\ 76 \overline{)135} \\ \underline{-76} \\ 59 \end{array}$$

Dividing Fractions

1. $\frac{5}{8} \div \frac{5}{7}$

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

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

4. $\frac{7}{8} \div \frac{1}{3}$

5. $2\frac{1}{3} \div 5\frac{5}{6}$

6. $10\frac{1}{3} \div 2$

7. $\frac{3}{4} \div \frac{6}{11}$

8. $6\frac{1}{4} \div 4\frac{3}{8}$

9. $\frac{4}{5} \div \frac{5}{6}$

10. $1\frac{1}{2} \div \frac{2}{3}$

11. $\frac{1}{9} \div 9$

12. $3\frac{1}{8} \div 1\frac{3}{4}$

Decimals (+,-)

1. Columns must be straight.
2. Decimal points must be lined up.
3. Fill in zeros whenever needed.

Example:

Add

$$\begin{array}{r} 1a) \ 5.92 \\ + \ 3.71 \\ \hline 9.63 \end{array}$$

$$\begin{array}{r} 1b) \ ^1 46.\overset{1}{0}9 \\ + \ 4.77 \\ \hline 50.86 \end{array}$$

$$\begin{array}{r} 1c) \ ^1 16.000 \\ + \ 4.423 \\ \hline 20.423 \end{array}$$

Subtract (borrow as needed)

$$\begin{array}{r} 2a) \ 5.92 \\ - \ 3.71 \\ \hline 2.21 \end{array}$$

$$\begin{array}{r} 2b) \ 4\overset{5}{\cancel{6}}.\overset{1}{0}9 \\ - \ 4.77 \\ \hline 41.32 \end{array}$$

$$\begin{array}{r} 2c) \ 1\overset{5}{\cancel{6}}.\overset{9}{\cancel{0}}\overset{9}{\cancel{0}}\overset{1}{0} \\ - \ 4.423 \\ \hline 11.577 \end{array}$$

Decimals (+,-)

$$\begin{array}{r} 1. \quad 4.6 \\ + 2.34 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 5.5 \\ 11.902 \\ + 9.87 \\ \hline \end{array}$$

$$3. \quad 7.02+3.9$$

$$4. \quad 0.094+0.15+3.296$$

$$5. \quad 0.145+8.9$$

$$6. \quad 24.36+32.9+8.783$$

$$\begin{array}{r} 7. \quad 12.17 \\ - 9.23 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 7.5 \\ - 5.13 \\ \hline \end{array}$$

$$9. \quad 7-4.35$$

$$10. \quad 20.5-3.74$$

$$11. \quad 94.73-16.62$$

$$12. \quad 48.44-29.58$$

Multiplying Decimals

Example: $3.77 \times 2.8 =$

1. Rewrite the problem as if you were multiplying whole numbers.

Line up the numbers on the right. DO NOT ALIGN THE DECIMAL POINTS.

2. Start on the right, multiply each digit in the top number by each digit in the bottom number just as with whole numbers.

$$\begin{array}{r}
 3.77 \\
 \times 2.8 \\
 \hline
 3016 \\
 + 7540 \quad (\text{don't forget to add the zero}) \\
 \hline
 10556
 \end{array}$$

3. Add the partial products.

4. Count how many numbers are after each decimal point in each number
In the answer, count starting at the right, move to the left the total number of decimal places.

$$\begin{array}{r}
 3.77 \quad (2 \text{ decimal places}) \\
 \times 2.8 \quad (+1 \text{ decimal places}) \\
 \hline
 \text{answer} \quad 10.556 \quad (3 \text{ decimal places}) \\
 \quad \quad \quad \underbrace{\quad \quad \quad}_{\cup \cup \cup} \\
 =10.556
 \end{array}$$

$$\begin{array}{r}
 \overset{\overset{\cancel{.}}{\cancel{.}}}{\cancel{.}} \overset{\overset{\cancel{.}}{\cancel{.}}}{\cancel{.}} \\
 1a) \quad 0.068 \quad (3 \text{ places}) \\
 \times 2.3 \quad (+1 \text{ place}) \\
 \hline
 0204 \\
 1360 \\
 \hline
 0.1564 \quad (4 \text{ places})
 \end{array}$$

$$\begin{array}{r}
 1b) \quad 3.12 \quad (2 \text{ places}) \\
 \times 0.9 \quad (+1 \text{ place}) \\
 \hline
 2808 \\
 0000 \\
 \hline
 2.808 \quad (3 \text{ places})
 \end{array}$$

$$\begin{array}{r}
 \overset{\overset{\cancel{.}}{\cancel{.}}}{\cancel{.}} \overset{\overset{\cancel{.}}{\cancel{.}}}{\cancel{.}} \\
 1c) \quad 5.74 \quad (2 \text{ places}) \\
 \times 42 \quad (+0 \text{ places}) \\
 \hline
 1148 \\
 22960 \\
 \hline
 241.08 \quad (2 \text{ places})
 \end{array}$$

Multiplying Decimals

1. 1.48×3.6

2. 6.23×0.21

3. 0.04×7

4. 3.2×0.15

5. 1.36×3.8

6. 0.74×0.23

7. 45×0.028

8. 76×3.3

9. 8.003×0.6

10. 5×2.41

11. 0.05×11.8

12. 6.5×9

Divide Decimals

1. Division needs to be done using straight columns.
2. Answers do NOT have remainders.
Zeros are added on to the end of the dividend whenever needed.

Divide by whole number. (Decimal point goes straight up in the answer.)

Example: $6.28 \div 4$

$$\begin{array}{r} 1.57 \\ 4 \overline{)6.28} \\ \underline{-4} \\ 22 \\ \underline{-20} \\ 28 \\ \underline{-28} \\ 0 \end{array}$$

Example: $3.50 \div 25$

$$\begin{array}{r} .14 \\ 25 \overline{)3.50} \\ \underline{-25} \\ 100 \\ \underline{-100} \\ 0 \end{array}$$

Divide by decimal. Decimal point MUST move to the right in the divisor until the divisor is a whole number. Then, the decimal point MUST move to the right the same number of places in the dividend. Zeros are added on to the end of the dividend whenever needed.

Example: $6.28 \div 0.4$

$$\begin{array}{r} 15.7 \\ 0.4 \overline{)6.28} \\ \underline{-4} \\ 22 \\ \underline{-20} \\ 28 \\ \underline{-28} \\ 0 \end{array}$$

Example: $3.5 \div 0.25$

$$\begin{array}{r} 14 \\ 0.25 \overline{)3.50} \\ \underline{-25} \\ 100 \\ \underline{-100} \\ 0 \end{array}$$

Dividing Decimals

1. $64.35 \div 45 =$

2. $7.412 \div 3.4 =$

3. $15.96 \div 6 =$

4. $2.413 \div 0.019 =$

5. $16.05 \div 15 =$

6. $0.672 \div 67.2 =$

7. $64.8 \div 18 =$

8. $6.592 \div 2.06 =$

9. $184.4 \div 8 =$

10. $0.158 \div 15.8 =$

11. $130.32 \div 24 =$

12. $0.448 \div 1.4 =$

Adding and Subtracting Integers

Rules for Addition

1. If numbers have the same sign, add them and the answer has the same sign as the numbers being added.

Example:

$$1a) 16 + 5 = 21$$

$$1b) -16 + -5 = -21$$

2. If the numbers have different signs, subtract the smaller number from the larger and the answer has same sign as the larger number.

Example:

$$2a) -36 + 15 =$$

$$\begin{array}{r} -36 \\ +15 \\ \hline -21 \end{array}$$

$$2b) -15 + 36 =$$

$$\begin{array}{r} 36 \\ + -15 \\ \hline 21 \end{array}$$

Rules for Subtraction

1. Leave the first number alone. Change the subtraction sign to an addition sign and change the second number to its opposite.

(if a pos #, make neg. , if neg. #, make pos.)

Follow the above rules for addition.

Example:

$$1a) 42 - 7 = 42 + (-7)$$

$$\begin{array}{r} 42 \\ + -7 \\ \hline 35 \end{array}$$

$$1b) -36 - 15 = -36 + (-15)$$

$$\begin{array}{r} -36 \\ + -15 \\ \hline -51 \end{array}$$

$$1c) -36 - (-15) = -36 + 15$$

$$\begin{array}{r} -36 \\ + 15 \\ \hline -21 \end{array}$$

$$1d) 14 - (-10) = 14 + 10$$

$$\begin{array}{r} 14 \\ + 10 \\ \hline 24 \end{array}$$

Adding and Subtracting Integers

1. $-90 + 6 =$

7. $67 - (-11) =$

2. $-45 + -44 =$

8. $12 - 15 =$

3. $-17 + 25 =$

9. $60 - (-13) =$

4. $-75 + -18 =$

10. $35 - 125 =$

5. $-15 + 8 =$

11. $22 - (-16) =$

6. $-27 + -17 =$

12. $416 - 2150 =$

Multiplying and Dividing Integers

Multiplying and dividing integers follow the same rules, you just have to decide whether you should multiply or divide.

Multiplying Integers:

$$-7(8)$$

$$7(8)=56$$

sign → *negative*

$$= -56$$

1. Multiply the numbers

$$(-7)(-8)$$

$$(7)(8)=56$$

2. Determine whether the answer is going to be positive or negative.

positive x positive = positive

negative x negative = positive

positive x negative = negative

negative x positive = negative

sign → *positive*

$$=56$$

Dividing Integers:

$$(-24) \div 6$$

$$6 \overline{)24}^4$$

sign → *negative*

$$= -4$$

1. Divide the numbers.

$$(-24) \div (-6)$$

$$6 \overline{)24}^4$$

2. Determine whether the answer is going to be positive or negative.

positive ÷ positive = positive

negative ÷ negative = positive

positive ÷ negative = negative

negative ÷ positive = negative

sign → *positive*

$$=4$$

Multiplying and Dividing Integers

1. $8(-6)$

7. $(-72) \div (-6)$

2. $(-9)(-9)$

8. $(-38) \div -2$

3. $-59(-79)$

9. $(-72) \div (-12)$

4. $(-18)(-12)$

10. $-120 \div 12$

5. $(38)(-2)$

11. $(-1000) \div 50$

6. $243(-7)$

12. $-200 \div (-25)$

One-Step Equations

A one-step equation is a straight forward as it sounds. You will only need to perform one-step to solve the equation.

1. To solve a one-step equation, do the inverse(opposite)of whatever operation is being done to the variable. Because it is an equation, what is done to one *side* of the equation must be done to the *other side* of the equation.

Solve an addition equation

by subtraction.

$$\begin{array}{r} x + 17 = -4 \\ -17 \quad -17 \\ \hline x = -21 \end{array}$$

Solve a subtraction equation

by addition.

$$\begin{array}{r} x - 12 = -13 \\ +12 \quad +12 \\ \hline x = -1 \end{array}$$

Solve a multiplication
equation by division.

$$8y = 112$$

$$\begin{array}{r} \frac{8y}{8} = \frac{112}{8} \\ y = 14 \end{array}$$

Solve a division equation
by multiplication.

$$\frac{n}{15} = 7$$

$$\begin{array}{r} (\frac{15}{1}) \frac{n}{15} = 7(15) \\ n = 105 \end{array}$$

One-Step Equations

1. $54 + x = 98$

7. $-5x = 115$

2. $b - 12 = -49$

8. $450 = a - 325$

3. $108 = -9x$

9. $\frac{m}{-4} = 13$

4. $6 = \frac{a}{7}$

10. $\frac{v}{-50} = 300$

5. $e - 43 = -45$

11. $-27 = w + 14$

6. $298 + n = 294$

12. $-60 = -12m$

Two-Step Equations

$$15x + 3 = 48$$

$$\begin{array}{r} -3 \quad -3 \\ \hline 15x = 45 \end{array}$$

1. Add or Subtract
Do the opposite of what is
being done to the variable.

$$\frac{t}{4} - 10 = -6$$

$$\begin{array}{r} +10 \quad +10 \\ \hline \frac{t}{4} = 4 \end{array}$$

$$\frac{15x}{15} = \frac{45}{15}$$

$$x = 3$$

2. Multiply or divide
Do the opposite of what is
being done to the variable.

$$\left(\frac{4}{1}\right)\frac{t}{4} = 4(4)$$

$$t = 16$$

Example:

1a) $13 - 6f = 31$

$$\begin{array}{r} -13 \quad -13 \\ \hline -6f = 18 \\ \hline \frac{-6f}{-6} = \frac{18}{-6} \\ f = -3 \end{array}$$

1b) $-10 = 2d - 8$

$$\begin{array}{r} +8 \quad +8 \\ \hline -2 = 2d \\ \hline \frac{-2}{2} = \frac{2d}{2} \\ -1 = d \end{array}$$

1c) $\frac{x}{3} + 2 = 5$

$$\begin{array}{r} -2 \quad -2 \\ \hline \frac{x}{3} = 3 \\ \hline (3)\frac{x}{3} = 3(3) \\ x = 9 \end{array}$$

1d) $18 = \frac{m}{5} - 4$

$$\begin{array}{r} +4 \quad +4 \\ \hline 22 = \frac{m}{5} \\ \hline (5)22 = \frac{m}{5}(5) \\ 110 = m \end{array}$$

Two-Step Equations

1. $2x + 3 = 15$

6. $10 = 3 + \frac{b}{2}$

2. $-8c + 1 = 39$

7. $12y - 6 = 138$

3. $9x - 15 = 39$

8. $-35 = 4n + 1$

4. $\frac{b}{3} + 13 = 11$

9. $15 = -11b + 4$

5. $\frac{c}{4} - 10 = 22$

10. $-24 = \frac{c}{6} + 7$

