Math 310 - Dr. Miller - HW #1: Number Sentence Terminology

1. Write the number sentence having the given numbers in the indicated roles. All numbers used should be whole numbers or fractions.
   (a) 1/2 and 1/3 are the addends.
   (b) 1 is the sum and 1/3 is an addend.
   (c) 1 is the minuend and 1/4 is the subtrahend.
   (d) 1 is the difference and 1/4 is the subtrahend.
   (e) 1 is the subtrahend and 1/4 is the difference.
   (f) 1/2 and 3/5 are the factors.
   (g) 1/2 is one factor and the product is 3.
   (h) 1/2 is one factor and the product is 1/2.
   (i) 1/2 is one factor and the product is 0.
   (j) 3/5 is both a factor and a product.
   (k) 1/5 is the quotient and 3 is the divisor.
   (l) 1/5 is the dividend and 3 is the divisor.
   (m) 1/5 is the divisor and 3 is the quotient.
   (n) 1/5 is the quotient and the dividend.
   (o) 1/2 is the divisor and the quotient is 0.
   (p) 2/5 is the only number used as an addend.
2. If possible, write a number sentence having the given qualities (there may be many different correct answers). If not possible, explain why. You may use whole numbers or fractions.
   (a) One addend is twice as large as the other.
   (b) The sum is 6 times as large as one addend.
   (c) The sum is 0 and the addends are natural numbers.
   (d) The sum is 0.
   (e) The subtrahend and difference are equal.
   (f) The difference is one more than the minuend.
   (g) The difference is twice as large as the subtrahend.
   (h) One factor is 5 more than the other.
   (i) One factor is five more than the product.
   (j) 1 is the product, but it is not a factor.
   (k) 0 is the dividend.
   (l) 0 is the divisor.
3. Make up a Fact Family that uses the given numbers in each fact.
   (a) 4, 8, 12
   (b) 10, 2, 5
   (c) 6,0,6
   (d) one 6 and two 0s
   (e) 6,1,6
   (f) only 1s
   (g) 1,1,2

Math 310 - Dr. Miller - Solutions to HW #1

1. Answers are written horizontally to save space, at the cost of readability in some cases.
   (a) $1/2 + 1/3 = 5/6$
   (b) $1/3 + 2/3 = 1$
   (c) $1 - 1/4 = 3/4$
   (d) $1\frac{1}{4} - 1/4 = 1$
   (e) $1\frac{1}{4} - 1 = 1/4$
   (f) $1/2 \times 3/5 = 3/10$
   (g) $1/2 \times 6 = 3$
   (h) $1/2 \times 1 = 1/2$
   (i) $1/2 \times 0 = 0$
   (j) $3/5 \times 1 = 3/5$
   (k) $3/5 \div 3 = 1/5$
   (l) $1/5 \div 3 = 1/15$
   (m) $3/5 \div 1/5 = 3$
   (n) $1/25 \div 1/5 = 1/5$
   (o) $0 \div 1/2 = 0$
   (p) $2/5 + 2/5 = 4/5$
2. (a) $1 + 2 = 3$
   (b) $1 + 5 = 6$
   (c) Not possible - natural numbers are positive, and when you add two positive numbers, the sum will be positive. 0 is NOT positive.
   (d) $0 + 0 = 0$
   (e) $6 - 3 = 3$
   (f) $5 - 2 = 3$
   (g) $9 - 3 = 6$
   (h) $2 \times 7 = 14$
   (i) $6 \times 1/6 = 1$ (Careful! $5 \times 1/5 = 1$ does NOT work here.)
   (j) $1/2 \times 2 = 1$
   (k) $0 \div 1/2 = 0$
   (l) It is not possible to divide by 0.
3. (a) $4 + 8 = 12$ $8 + 4 = 12$ $12 - 8 = 4$ $12 - 4 = 8$
   (b) $2 \times 5 = 10$ $5 \times 2 = 10$ $10 \div 5 = 2$ $10 \div 2 = 5$
   (c) $6 + 0 = 6$ $0 + 6 = 6$ $6 - 0 = 6$ $6 - 6 = 0$
   (d) $0 \times 6 = 0$ $6 \times 0 = 0$ $0 \div 6 = 0$ ($0 \div 0 = 6$ is nonsense! Don't write it.)
   (e) $6 \times 1 = 6$ $1 \times 6 = 6$ $6 \div 6 = 1$ $6 \div 1 = 6$
   (f) $1 \times 1 = 1$ $1 \div 1 = 1$
   (g) $1 + 1 = 2$ $2 - 1 = 1$