RULES FOR OPERATIONS OF SIGNED NUMBERS

ADDING TWO SIGNED NUMBERS

1. If the number signs are the same, add and use that sign in the answer.
   Example: 2 + 4 = 6
   2 is a positive number and 4 is a positive number, so 6 is a positive number.

   (– 2) + (– 4) = – 6
   -2 is a negative number and - 4 is a negative number; so add 2 and 4 to get 6, but since they are both negative, then 6 is made negative.

2. If the number signs are different, subtract and use the sign of the larger number as the sign in the answer.
   Example: 2 + (– 5) = – 3
   Since the absolute value of 2 is the smaller than the absolute value of – 5 , subtract 2 from 5. 5 – 2 = 3. Now 5 is the larger of the two absolute values, but is negative in the problem, the answer will be made negative. Think always about money—if you have 2 dollars and something costs $5, then you are $3 short (or $3 in the hole)

   (– 2) + 5 = 3
   The absolute value of – 2 is smaller than the absolute value of 5, subtract 2 from 5. 5 – 2 = 3. Again, 5 is the larger of the two absolute values, since it is a positive number, the answer is positive.

SUBTRACTING SIGNED NUMBERS

1. When you are subtracting think of the word opposite. You will be doing the opposite operation of the sign of the number. The rules are the same as with addition.
   Example: 5 – 2 = 3
   5 and 2 are both positive numbers, the absolute value of 5 is greater than the absolute value of 2. Subtract 2 from 5 to get 3. Since 5 is greater than 2 and is positive, 3 is positive.

   5 – (– 2) = 7
   5 is positive and – 2 is negative. When you have – (– 2), think - I am going to use the opposite of negative 2, which is positive 2. 5 – (– 2) = 5 + 2 and 5 + 2 = 7

MULTIPLYING SIGNED NUMBERS

1. If the number signs are the same, give the answer a positive sign.
   Example: (5) (2) = 10 or (– 2) (– 5) = 10

2. If the number signs are different, give the answer a negative sign.
   Example: (5) (– 2) = – 10 or (– 5)(2) = – 10

DIVIDING SIGNED NUMBERS

1. If the number signs are the same, give the answer a positive sign.
   Example: 6 ÷ 2 = 3 or (– 6) ÷ (– 2) = 3

2. If the number signs are different, give the answer a negative sign.
   Example: 6 ÷ (– 2) = — 3 or (– 6) ÷ 2 = — 3