Weighing Inequalities

You are walking through the woods one day, when you come upon a huge party! The forest animals are celebrating their new-found appreciation for mathematics. You kindly ask if you may join in with their festivities, but they are reluctant. They agree that if you can demonstrate your knowledge of inequalities, then you may join their party. They lead you to a clearing where you find four balloons. Each one is a different size, and is able to hold up a different weight. Here are their instructions:

The orange balloon can hold up 5 lbs.
The yellow balloon can hold up 20 lbs.
The green balloon can hold up 50 lbs.
The blue balloon can hold up 100 lbs.

Your objective is to put the animals in order from lightest to heaviest, using inequalities to describe their weights.

1.) Hang the turtle from the orange balloon.
   Does he fall to the ground? ________
   Since the orange balloon holds up 5 lbs, we know that the turtle weighs ________________ 5 lbs.
      (more than or less than)
   Written as an inequality, the turtle ______ 5lbs.
      ( < or > )

   Now hang the turtle from the yellow balloon.
   Does he fall to the ground? ________
   Since the yellow balloon holds up 20 lbs, we know that the turtle weighs ________________ 20 lbs.
      (more than or less than)
Written as an inequality, the turtle _______ 20 lbs.

( < or > )

Now hang the turtle from the green balloon.
Does he fall to the ground? ______
Since the green balloon holds up 50 lbs, we know that the turtle weighs ________________ 50 lbs.
(more than or less than)
Written as an inequality, the turtle ______ 50 lbs.
( < or > )

Finally, hang the turtle from the blue balloon.
Does he fall to the ground? ______
Since the blue balloon holds up 100 lbs, we know that the turtle weighs ________________ 100 lbs.
(more than or less than)
Written as an inequality, the turtle ______ 100 lbs.
( < or > )

Now what can we say about the turtle’s weight?
Using your inequalities above, fill in the following blanks with the number of pounds:

________lbs. < turtle < ________lbs.
(Hint: first blank: Which balloon still let the turtle fall?
Second blank: Which balloon held up the turtle?)
*Try to use the smallest range possible.

2.) Repeat the same process with the lion. Answer the following questions in the same manner:

Since the orange balloon holds up 5 lbs, we know that the lion weighs ________________ 5 lbs.
(more than or less than)
Written as an inequality, the lion ______ 5lbs.
Since the yellow balloon holds up 20 lbs, we know that the lion weighs \__\__\__\__\__\__\__\__\__\__\__\_ 20 lbs.  
(more than or less than) 
Written as an inequality, the lion ______ 20 lbs.  
( < or > )

Since the green balloon holds up 50 lbs, we know that the lion weighs \__\__\__\__\__\__\__\__\__\__\__\_ 50 lbs.  
(more than or less than) 
Written as an inequality, the lion ______ 50 lbs.  
( < or > )

Since the blue balloon holds up 100 lbs, we know that the lion weighs \__\__\__\__\__\__\__\__\__\__\__\_ 100 lbs.  
(more than or less than) 
Written as an inequality, the lion ______ 100 lbs.  
( < or > )

Using your inequalities above, fill in the following blanks with the number of pounds:
________lbs. < lion < ________lbs.
*Try to use the smallest range possible.

3.) Repeat the same process with the pig. Answer the following questions:

Since the orange balloon holds up 5 lbs, we know that the pig weighs \__\__\__\__\__\__\__\__\__\__\__\_ 5 lbs.  
(more than or less than) 
Written as an inequality, the pig ______ 5lbs.  
( < or > )
Since the yellow balloon holds up 20 lbs, we know that the pig weighs $\underline{\phantom{0}}$ 20 lbs.
   (more than  or  less than)
Written as an inequality, the pig $\underline{\phantom{0}}$ 20 lbs.
   ($<$ or $>$)

Since the green balloon holds up 50 lbs, we know that the pig weighs $\underline{\phantom{0}}$ 50 lbs.
   (more than  or  less than)
Written as an inequality, the pig $\underline{\phantom{0}}$ 50 lbs.
   ($<$ or $>$)

Since the blue balloon holds up 100 lbs, we know that the pig weighs $\underline{\phantom{0}}$ 100 lbs.
   (more than  or  less than)
Written as an inequality, the pig $\underline{\phantom{0}}$ 100 lbs.
   ($<$ or $>$)

Using your inequalities above, fill in the following blanks with the number of pounds:

$\underline{\phantom{0}}$ lbs. $<$ pig $<$ $\underline{\phantom{0}}$ lbs.
*Try to use the smallest range possible.

Recopy the following equations from the previous pages:

$\underline{\phantom{0}}$ lbs. $<$ turtle $<$ $\underline{\phantom{0}}$ lbs.

$\underline{\phantom{0}}$ lbs. $<$ lion $<$ $\underline{\phantom{0}}$ lbs.

$\underline{\phantom{0}}$ lbs. $<$ pig $<$ $\underline{\phantom{0}}$ lbs.
Based on what we found, put the animals in order from lightest to heaviest

________________    <   __________________    <  __________________

(lightest)  

Check the SOLUTION card (in the grass area) to see if you are correct. Hopefully, you got it correct and the animals welcome you to their party. If you didn’t get it correct, they still let you come to their party, and they’ll teach you everything you ever wanted to know about inequalities!