

# Inequalities worksheet

**Translate each verbal phrases into an algebraic expression**

1. Twice the sum of  $x$  and 3 is less than 5 \_\_\_\_\_
2. Sum of 4 times  $x$  and 2 is at most 10 \_\_\_\_\_
3. The difference between two times  $x$  and one is at least 11 \_\_\_\_\_
4. Twice the sum of 13 and  $x$  is not greater than 15. \_\_\_\_\_
5. Thrice the sum of  $x$  and 12 is greater than or equal to 8. \_\_\_\_\_

**Solve**

1.  $5 - 6x > -19$

2.  $4(x - 2) \geq 20$

3.  $\frac{5x-1}{4} > 3x$

4.  $2(x + 1) - 3(x - 2) < x + 6$

$$5. \frac{2}{3} \left[ x - \left( 1 - \frac{x-2}{3} \right) \right] + 1 \leq x$$

$$6. \frac{3(x-2)}{5} \leq \frac{5(2-x)}{3}$$

$$7. 81^{5x-11} \geq 27^{3x+15}$$

$$8. 9^{5x-11} \geq \left( \frac{1}{3} \right)^{3x+15}$$

9. Frozen chickens will be sold by a major chain of supermarkets only if their weight is at least .2 kg and not more than 3.4 kg. What should be the range of weight.
10. Jennie sold 3 cookbooks. To earn a prize, Jennie must sell at least 12 cookbooks.
11. Peter has 2 baseball hats. Peter and his brothers have fewer than 12 baseball hats.