Modeling Inequalities

>	≥	<	≤
is more than	minimum	is smaller than	maximum
is greater than	at least	is less than	at most
is larger than	is not less than	is more than	is not more than
above	no less than	below	no more than
	not smaller than		is not greater than

Examples

1. Grace's grandfather is at least 60 years old. $g \geq 60$

2. Conner's grade is above an 88%. $g > 88$

3. Nate was no more than 5 minutes late. $n \leq 5$

4. Kara's ring finger is smaller than a size 7. $r < 7$

5. Mandi needs to arrive between 5 and 6 o'clock. $5 < m < 6$

Try These

1. The temperature is less than 32°F.

2. The forensics team must have at least ten students to complete.

3. An elevator can carry no more than 15 people.

4. The trip to the Outer Banks takes between 6 and 8 hours.

5. To attend a Raven's game you will spend a minimum of $75.

6. The cost of dinner was more than $40.

7. Michael Jordan has a vertical leap of no less than 38 inches.

8. The number of kids that signed up to play tennis is at most 50.

Example

The Dallastown High School band wants to order polos. They will receive a discounted price of $24 per shirt plus a $25 delivery fee if they spend at least $250. What is the minimum number of polo shirts they must buy?

Let p = the number of polo shirts

Inequality: $24x + 25 \geq 250$

Solution: $x \geq 9.375$

Interpret your solution: The band must buy at least 10 shirts to receive the discount.

Try These

9. You want to rent a limousine for a trip to Baltimore's Inner Harbor. The limo costs $300 for the night and $0.15 per mile. You have a maximum of $350 to spend. What is the maximum number of miles you can travel?
   Let
   Inequality:

   Solution:

   Interpret your answer:

10. Taylor is having a birthday party. Chuck E. Cheese costs $13 per person while Suburban Bowlerama costs $10 per person plus a $24 fee for food. For how many people would Chuck E. Cheese be cheaper than going to Suburban Bowlerama?
    Let
    Inequality:

    Solution:

    Interpret your answer:

11. The senior class wants to make money for their senior party. They already have $2500 raised and want to have more than $4000. They decide to sell gift cards for Giant Foods. Giant will give them $5 for every gift card they sell. What is the minimum number of gift cards the senior class must sell?

Let

Inequality:

Solution:

Interpret your answer:

12. George does not want to spend more than $225 for Christmas presents. He has already spent $176. He finds vintage t-shirts for $12 that he would like to buy for his friends. What is the greatest number of t-shirts he can buy without exceeding his budget?

Let

Inequality:

Solution:

Interpret your answer:

13. Ellie needs to order books for her book club. Each book cost $7.99. She can get free shipping if she spends more than $100. What is the minimum number of books she needs to order to receive free shipping?

Let

Inequality:

Solution:

Interpret your answer: