LESSON 16

1. $5x > 20$

2. $2x/3 < 5$ or $2x \div 3 < 5$

3. $x - 3 \geq 12$

4. $x + 8 \leq 10$

5. $4x \leq 8$

6. $x + 5 \geq 8$

7. a. $25x =$ cost of shirts
$30y =$ cost of pants
Total cost ≤ 150, so $25x + 30y \leq 150$.

b. When $x = 3$, $y \leq 2.5$.
Ella can by up to 2 pairs of pants.

c. When $y = 2$, $y \leq 3.6$.
Ella can by up to 3 shirts.

8. a. The pen has 1 length and 2 widths.
Perimeter = length + 2(width) > 80,
so $x + 2y > 80$.

b. When $x = 40$, $y > 20$.
The width is greater than 20 meters.

c. When $y = 25$, $x > 30$.
The length is greater than 30 meters.

d. Yes; $50 + 2(20) > 80$ is true.

9. a. $2x =$ cost of sodas
$6y =$ cost of hotdogs
Total cost ≤ 50, so $2x + 6y \leq 50$.

b. When $x = 10$, $y \leq 5$.
Lucas can buy up to 5 hotdogs.

c. When $y = 6$, $x \leq 7$.
Lucas can buy up to 7 bottles of soda.

10. a. $6x =$ sales from student tickets
$10y =$ sales from adult tickets
Total sales > 1500, so $6x + 10y > 1500$.

b. When $x = 70$, $y > 108$.
More than 108 adult tickets must be sold.

c. When $y = 120$, $x > 50$.
More than 50 student tickets must be sold.

11. a. $x =$ number of individual notebooks
$4y =$ number of notebooks in packs
Total number of notebooks ≥ 15, so $x + 4y \geq 15$.

b. When $x = 5$, $y \geq 2.5$.
Penny needs to buy at least 3 packs.

c. When $y = 3$, $x \geq 3$.
Penny needs to buy at least 3 individual notebooks.

12. a. Perimeter = 2(length + width) ≤ 100,
so $2(x + y) \leq 100$

b. When $x = 20$, $y \leq 30$.
The width is at most 30 feet.

c. When $y = 25$, $y \leq 25$.
The length is at most 25 feet.

d. When $y = 4x$, $x \leq 10$.
The maximum possible length is 10 feet.
The maximum possible width is $4(10) = 40$ feet.