

Review for Test 8

Find the central tendencies for the following data: 67, 99, 74, 75, 95, 93, 80, 83, 89, 85, 75, 87

1. mean = 83.5
2. median = 84
3. mode = 75
4. range = 32

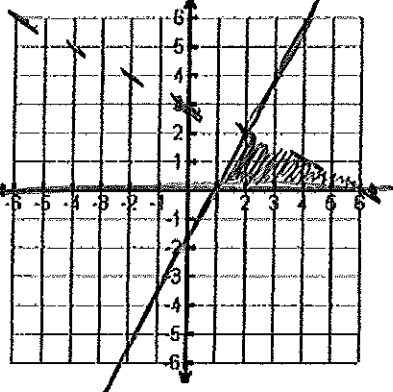
5. Make a box-and-whiskers plot from the given data above.

Min = 67  
 Q<sub>1</sub> = 75  
 Q<sub>3</sub> = 91  
 Max = 99

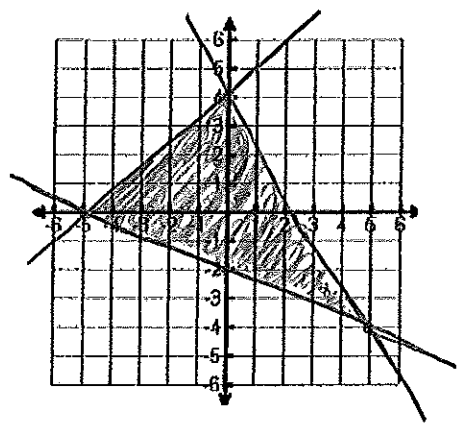


Graph the systems of inequalities. Shade the solution set.

6.  $y \leq 2x - 2$   
 $x + 2y < 6$   
 $y \geq 0$   
 $y < -\frac{1}{2}x + 3$



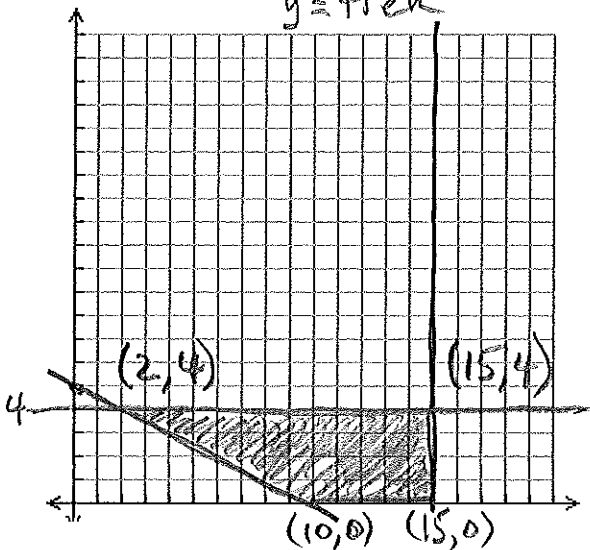
7.  $2x + 5y \geq -10$   
 $8x + 5y \leq 20$   
 $4x - 5y \geq -20$   
 $y \geq -\frac{2}{5}x - 2$   
 $y \leq -\frac{8}{5}x + 4$   
 $y \leq \frac{4}{5}x + 4$



Solve the following problem using linear programming.

8. A camping supply company produces backpacks in two models, journey and trek. The journey model requires 4 hours of labor, and the company makes a profit of \$40. The trek model requires 6 hours of labor and the company makes a profit of \$80. The distributor will accept no more than 4 trek models and 15 journey models per week. What is the minimum number of hours of labor that are required for the company to make a profit of at least \$400 per week?

$x = \text{journey}$   
 $y = \text{trek}$



Objective function:  $H = 4x + 6y$

Constraints:  $40x + 80y \geq 400$   
 $x \leq 15$   
 $y \leq 4$   
 $x \geq 0, y \geq 0$

$(2, 4) \rightarrow 4 \cdot 2 + 6 \cdot 4 = 32$   
 $(10, 0) \rightarrow 4 \cdot 10 + 6 \cdot 0 = 40$   
 $(15, 0) \rightarrow 4 \cdot 15 + 6 \cdot 0 = 60$   
 $(15, 4) \rightarrow 4 \cdot 15 + 6 \cdot 4 = 84$

How many backpacks? 2 journey, 4 trek

Minimum hours = 32