

# HW Sol 9.1

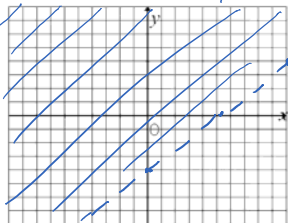
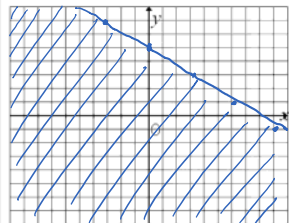
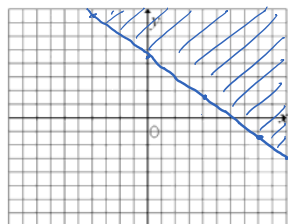
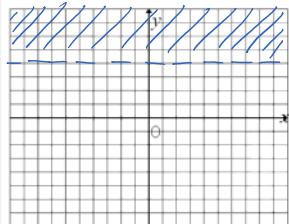
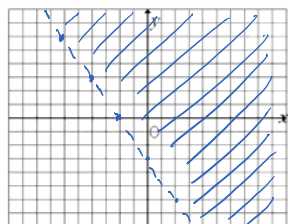
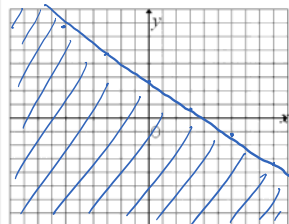
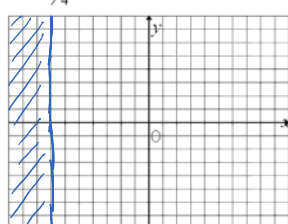
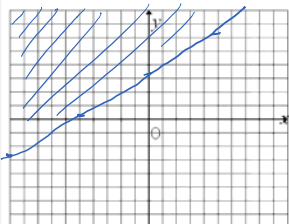
May 16, 2016 12:33 PM

Name: Brendan Yu

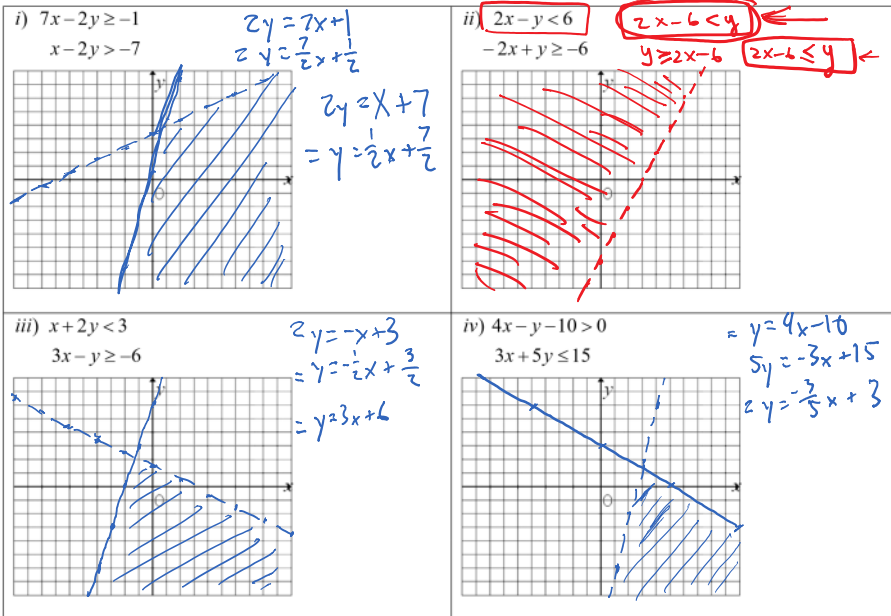
Date: \_\_\_\_\_

## Pre Calculus 11: HW Section 9.1 Graphing Linear Inequalities on XY Plane

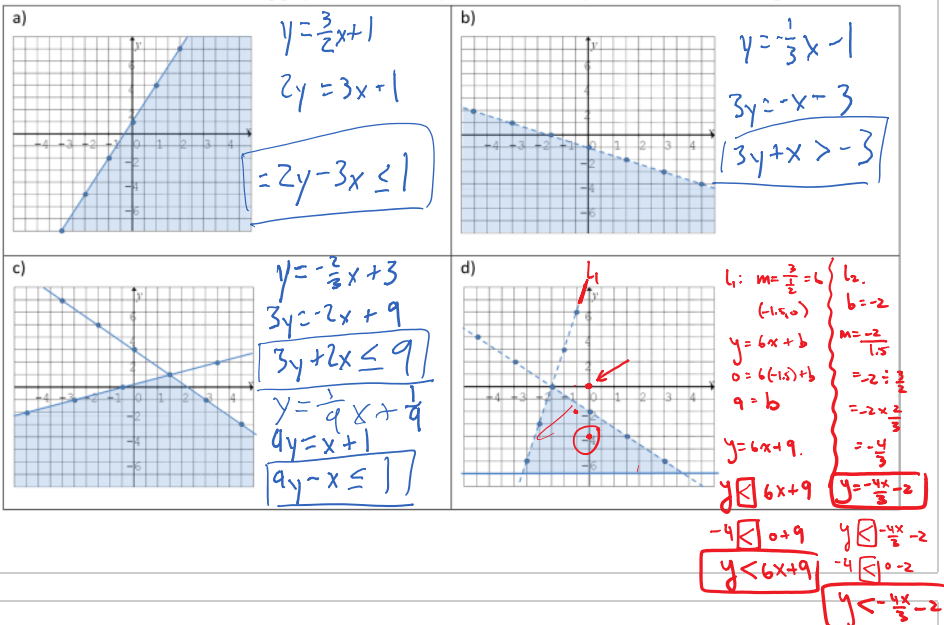
1. Graph each of the following inequalities and shade in the correct area:

<p>i) <math>4x - 5y &lt; 20</math></p> <p><math>5y = 4x - 20</math>  <math>y = \frac{4}{5}x - 4</math>  <math>4(0) - 5(0) = 0</math>  <math>0 &lt; 20</math></p> 	<p>ii) <math>2x + 3y \leq 15</math></p> <p><math>3y = 15 - 2x</math>  <math>y = -\frac{2}{3}x + 5</math>  <math>2(0) + 3(0) = 0</math>  <math>0 \leq 15</math></p> 
<p>iii) <math>3x + 4y \geq 18</math></p> <p><math>4y = -3x + 18</math>  <math>y = -\frac{3}{4}x + \frac{9}{2}</math>  <math>0 \geq 18</math></p> 	<p>iv) <math>3y - 12 &gt; 0</math></p> <p><math>3y = 12</math>  <math>y = 4</math>  <math>-12 &gt; 0</math></p> 
<p>v) <math>3x + 2y &gt; -6</math></p> <p><math>2y = -3x - 6</math>  <math>y = -\frac{3}{2}x - 3</math>  <math>0 &gt; -6</math></p> 	<p>vi) <math>-2x - 3y \geq -8</math></p> <p><math>3y = -2x + 8</math>  <math>y = -\frac{2}{3}x + \frac{8}{3}</math>  <math>0 \geq -8</math></p> 
<p>vii) <math>-\frac{7}{4}x \geq 14</math></p> <p><math>-\frac{7}{4}x = 14</math>  <math>-7x = 56</math>  <math>x = -8</math>  <math>0 \geq 14</math></p> 	<p>viii) <math>-3x + 5y \leq -16</math></p> <p><math>5y = 3x - 16</math>  <math>y = \frac{3}{5}x - \frac{16}{5}</math>  <math>0 \leq -16</math></p> 

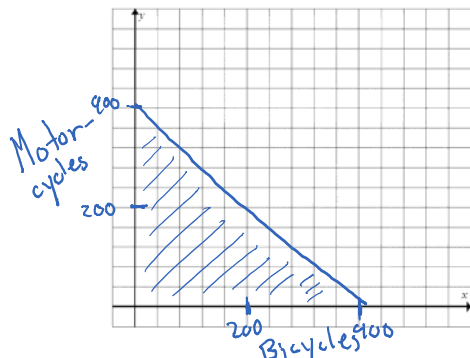
2. Graph the system with the given two inequalities:



3. Given each of the following graphs, write the inequalities that corresponds with the shaded region:

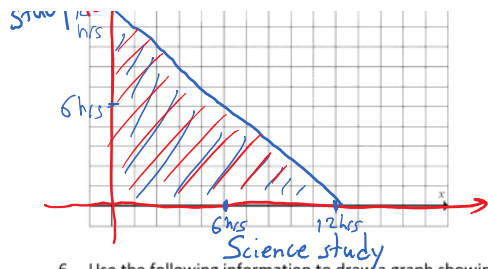


4. A company makes motorcycles and bicycles. In any given week, a total of up to 400 vehicles can be made. Draw a graph showing the number of motorcycles and bicycles that could be made in one week.



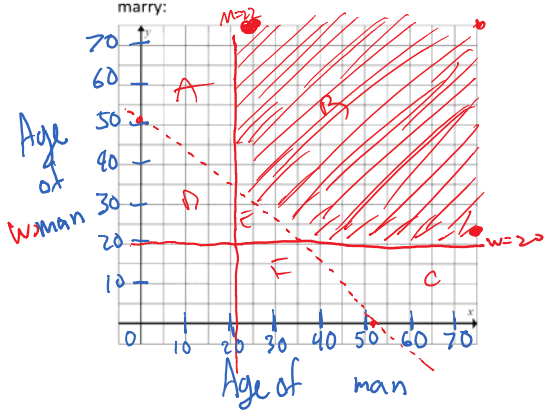
5. Jack plans to spend up to 12 hours reviewing Science and Mathematics in preparation for examinations. Draw a graph showing how much time he could spend studying for each subject.





$$s \geq 0$$

6. Use the following information to draw a graph showing the ages at which men and women in China can marry:



A Chinese law sets minimal legal ages for marrying. The minimum legal age is 22 for men and 20 for women. In addition, couples are urged not to marry until the ages of the bride and groom total more than 57

$$M \geq 22$$

$$W \geq 20$$

$$M + W > 57$$

7. Given the system of inequalities, how many of the given points satisfy the system?

$$x + 2y > 4$$

$$x - 2y \geq 6$$

~~none~~ ~~one~~ ~~two~~ ~~three~~ ~~four~~  $D(8,1)$

8. Which of the following shapes best describes the solution to the area of the system:

$$x + 2y \leq 6 \quad x + 2y \geq -4$$

$$x - 2y \geq -4 \quad x - 2y < 6$$

~~A) Parallelogram~~ ~~B) Square~~ **C) Rhombus** ~~D) Rectangle~~

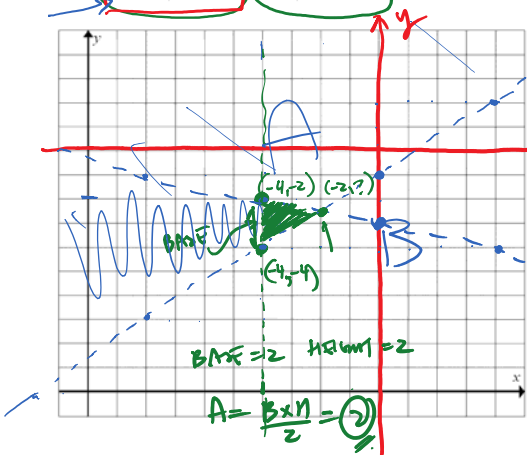
9. Which of the following inequalities have the same graph?

**A)  $y < \frac{1}{2}x - 3$**     B)  $\frac{1}{2}x - y > 3$

~~C)  $y > \frac{1}{2}x - 3$~~     ~~D)  $y < \frac{1}{2}x + 3$~~

10. Find the area of the triangle defined by the give system:

$3x - 4y - 4 < 0$ ,  $x + 4y + 12 < 0$ ,  $x > -4$



$$3x - 4y - 4 < 0$$

$$3x - 4 < 4y$$

$$\frac{3x}{4} - 1 < y$$

$$x + 4y + 12 < 0$$

$$4y < -x - 12$$

$$y < -\frac{x}{4} - 3$$

$$x > -4$$

$$3x - 4y - 4 = 0$$

$$x + 4y + 12 = 0$$

$$4x + 8 = 0$$

$$4x = -8$$

$$x = -2$$