

MTH 60, Fall Term 2009  
Final Exam – Calculator Portion  
Given December 9, 2009

Name \_\_\_\_\_

**Please read all directions carefully – your test score will be probably decrease if you fail to read and follow directions.**

1. Find the equation of a line that passes through the points  $(-2, -6)$  and  $(-3, 9)$ ; state the equation in slope-intercept form (9 points)

2. Find the area of the triangle shown in Figure 1. Assume that the linear units for the graph are cm. Include units *while making your calculation and in your conclusion*. The area formula for a triangle is  $A = \frac{1}{2}bh$ . (6 points)

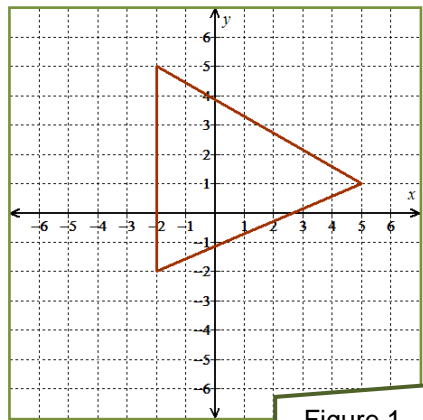
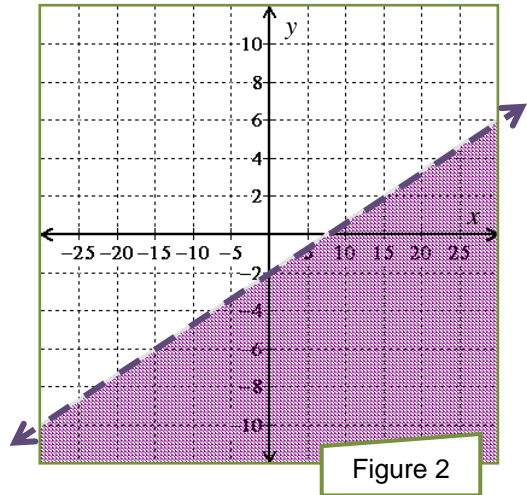


Figure 1

3. Find and state an inequality whose solution set would be the graph shown in Figure 2. (5 points)



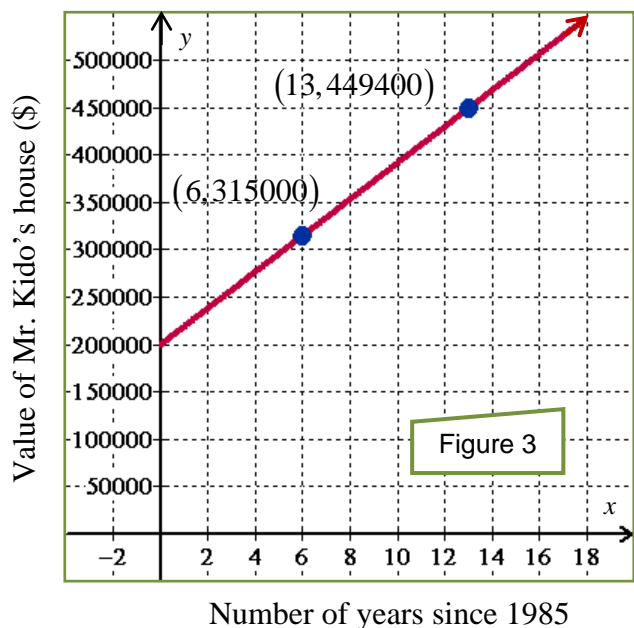
4. Solve the equation  $\frac{x}{3} - \frac{3}{2} = \frac{x}{4} + \frac{1}{4}$  and state the solution using a complete sentence. (6 points)

5. Solve the equation  $\frac{PV}{T} = \frac{k}{2}$  for  $T$ . (5 points)

6. After several years of gaining weight, a math instructor named Dewius Bellius began going to the gym in early 2008. Since early 2008, Dewius' weight has decreased by 20%. If Dewius' current weight is 186 lb., what was his weight when he first started going to the gym? (5 points)

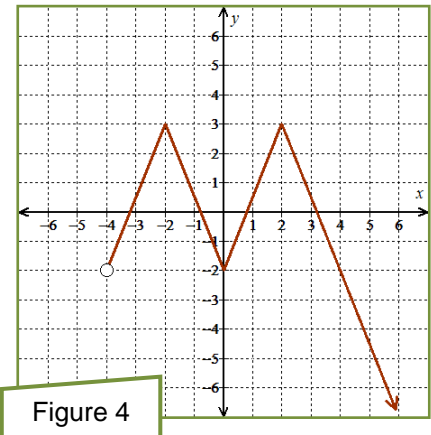
7. Mr. Kido purchased a house in 1985. Six years later the value of the house was \$315,000. Thirteen years after it was first purchased, the house was worth \$449,400. A graph of the value of Mr. Kido's house is shown in Figure 3.

Find the slope of this line. Make sure that you include the units when finding the slope! (5 points)



8. Consider the function  $f$  shown in Figure 4. Answer each of the following questions in regards to this function.

a. State the domain and range of  $f$  using interval notation. (6 points)



b. State the values of  $f(-2)$  and  $f(5)$ . (3 points)

c. For what value(s) of  $x$  does  $f(x) = -2$ ? (3 points)

9. Solve  $2 - 6x < 17 - 3x$ . State the solution set using set builder notation. (8 points)