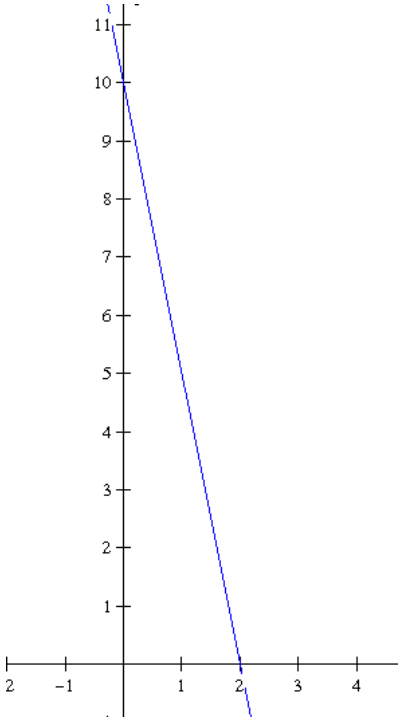
Name:

QUIZ 13 – MATH IB HL

1. (15%) Given the graph, write the expression of the perpendicular linear function passing through point (-1, 6) and **sketch it on the graph**.



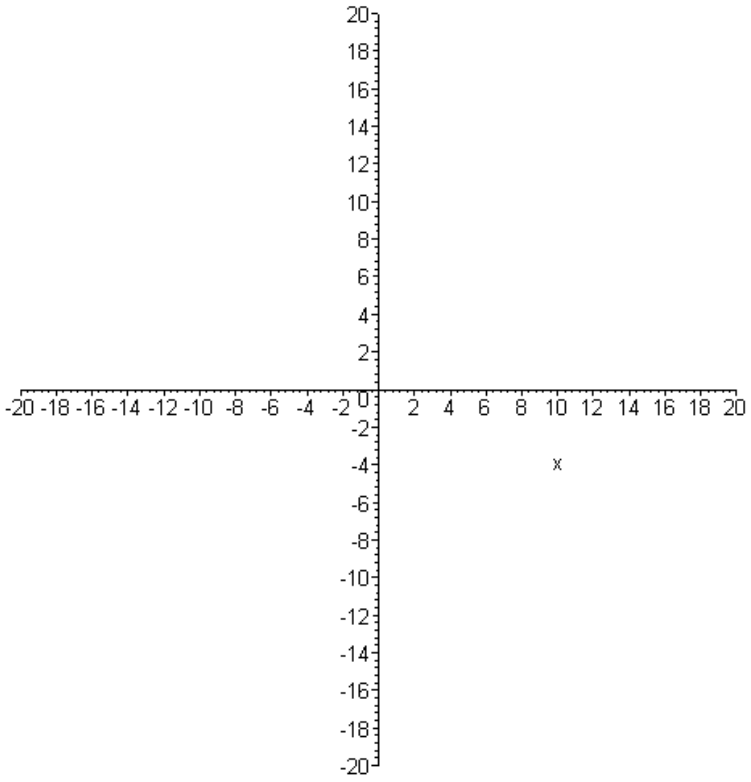
2. (15%) In the process of making product A the fixed **cost** is 160 euros and a 5 euros **benefit** for **each** unit sold.

   a. (7%) Write down the linear function describing the total **Benefit** for selling n products.

   b. (8%) Find the number of products that need to be sold in order for the product to be profitable.

3. (30%) Given the points A(9, 0) and B(–7, 6).

   I. (5%) Sketch points A and B on the diagram
   II. (5%) Find the midpoint M and show it on the diagram.
   III. (20%) Find a point C on the x axis so that AC = BC. Show the location of point C on the diagram.



4. (40%) The amount of gasoline in the deposit of car A is 60 L and it can do 1200 km without refueling. The amount of gasoline in the deposit of car B is 50 L and it can do 1500 km without refueling.

    a. (10%) Find the amount of L per Km consumed by each one of the cars.

    b. (10%) Write a linear function to describe the amount of Gasoline G(x) **left in the deposit** for each one of the cars after driving x km. Indicate the Domain and Range in each case.

    c. (10%) Sketch the functions, find and indicate the coordinates of all the important points on graph (choose appropriate scale, **provide all info** on the graph etc.). Use the diagram provided in the next page.

    d. (10%) Find the point of intersection of the 2 graphs and explain its meaning.