1. Suppose that $f(x) = 5x - 7$ for all $x \in \mathbb{R}$.
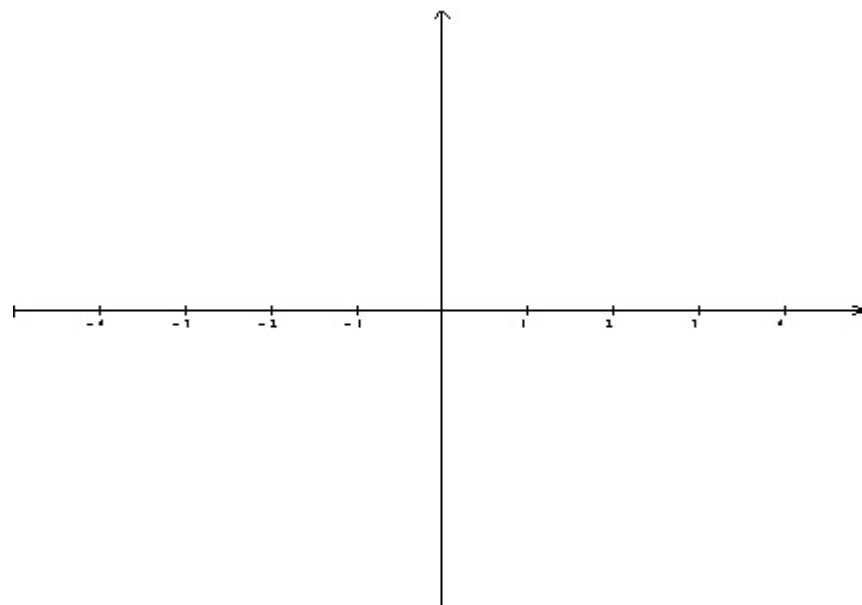   a. Complete the following table :

x	-3	-2	-1	0	1	2	3
$f(x)$							

   b. Complete the following mapping diagram for f with the indicated numbers (determine an appropriate scale for the target values.):
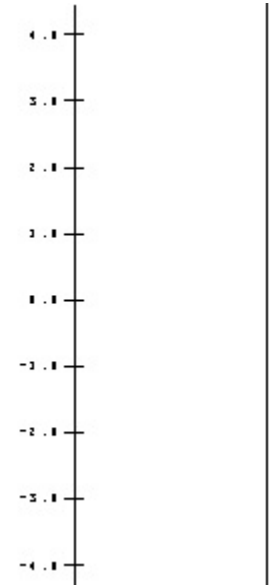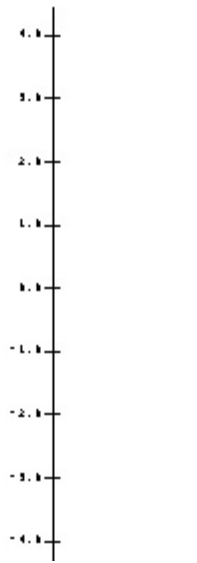
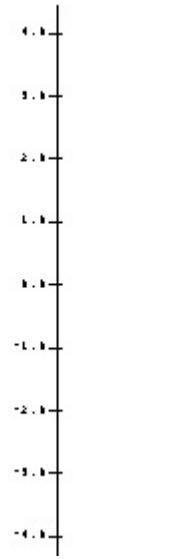   c. Sketch a graph for f based on the chart (determine an appropriate scale for the vertical axis.):

2. Let $f(x) = mx + b$ sketch mapping diagrams for the following:
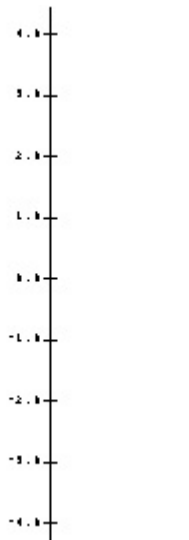
Use the same scale for the second axis.

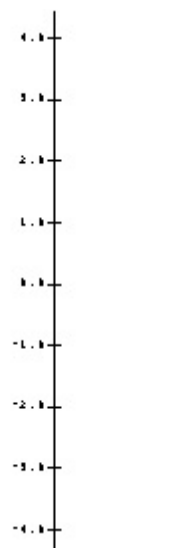   *a.* m = -2; b = 1: $f(x) = -2x + 1$ m = 2;   *d.* m = 0; b = 1: $f(x) = 0x + 1$
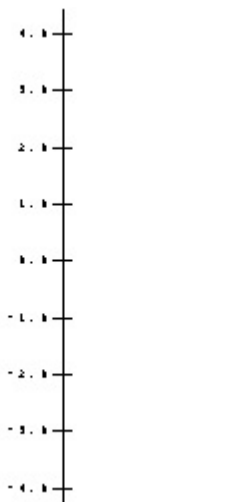
   b. b = 1: $f(x) = 2x + 1$ *e.* m = 1; b = 1: $f(x) = x + 1$
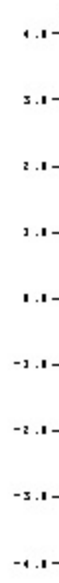
   c. m = ½; b = 1: $f(x) = ½x + 1$

3.   Using the focus point to solve a problem. [Use the same scale for the second axis.]
E 1.Solving a linear equation: 2x+1 =5
Let $f(x) = 2x+1$
For which x does $f(x) = 5$?

Solution: Find the focus points [2,1] for f.
Use [2,1] to find the solutions.

4.   Suppose f is a linear function with $f(1) = 3$ and $f(3) = -1$.
Find $f(0)$. Ans. _____
For which x does $f(x) = 0$. Ans.: _____

Solution: Find the focus point P_f for f.
Use P_f to find the solution.
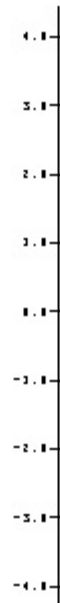
5.

    a.   On separate diagrams sketch mapping diagrams for $g(x) = 2x$ and $h(x) = x+1$
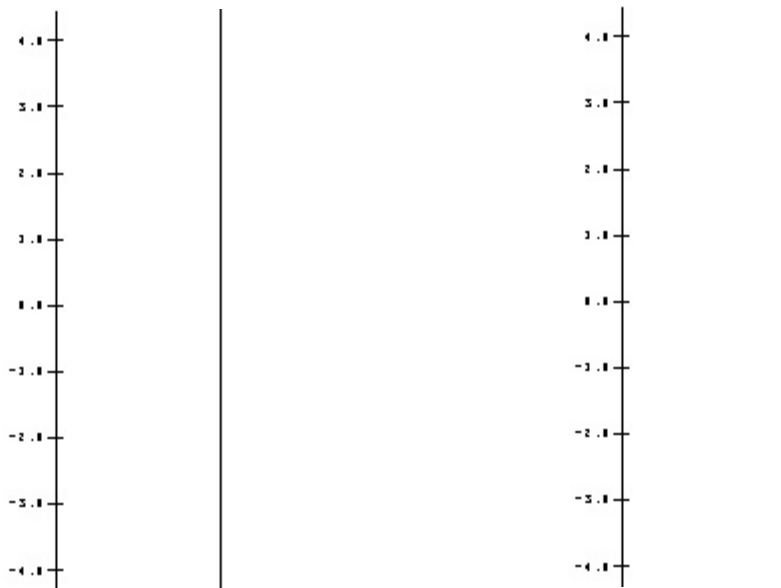
    b. Use these sketches to draw a composite sketch of the mapping diagram for the composite function $f(x) = h(g(x)) = (2x) + 1$ and then a sketch for the mapping diagram of $f(x) = 2x + 1$