Chapter 1

Functions and Graphs

Exercise Solution

Exercise 1.1.23

Sketch the graph for the function $f(x) = 3x - 6$ with the aid of table 1.1.

x	-3	-2	-1	0	1	2	3
y	-15	-12	-9	-6	-3	0	3

Table 1.1: Relation between x and y in exercise 1.1.23

Solution

Begin by sketching the axes. We choose the same scale on both axes to not distort the graph. We choose the range for both axes to be -15 to 15, allowing us to plot all the points from table 1.1, see figure 1.1.

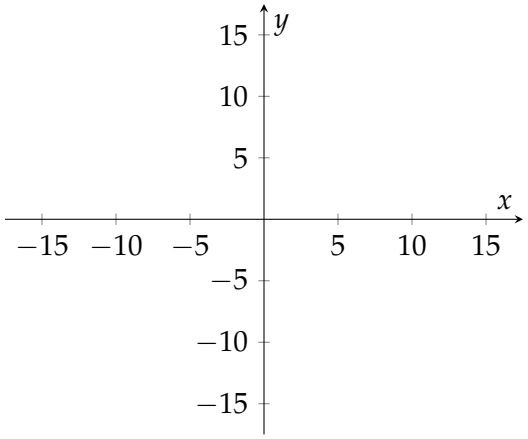

Figure 1.1: Empty graph with just the axes

After having sketched the axes we add markers based on the data in table 1.1, see figure 1.2.

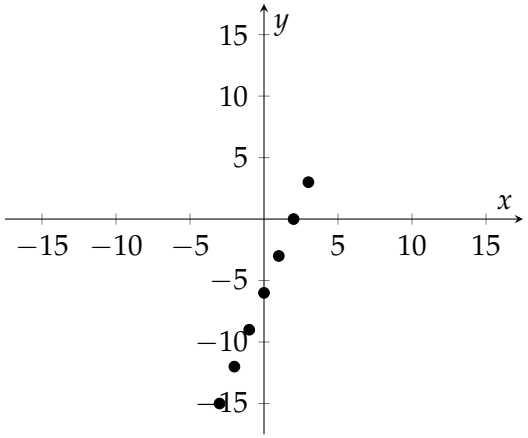

Figure 1.2: Graph with added markers

We then connect the markers with line segments. In this particular case the result will be a single straight line so we can use a ruler when sketching, , see figure 1.3.

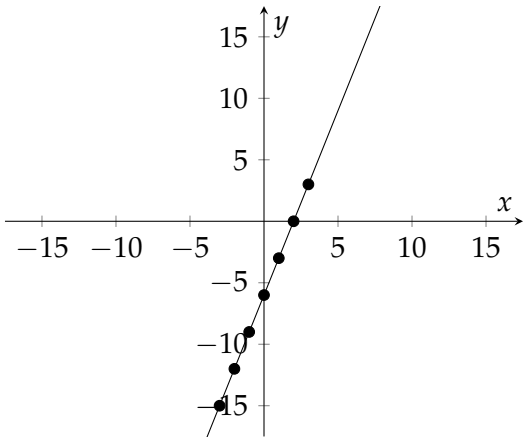

Figure 1.3: Graph with connected markers

Answer

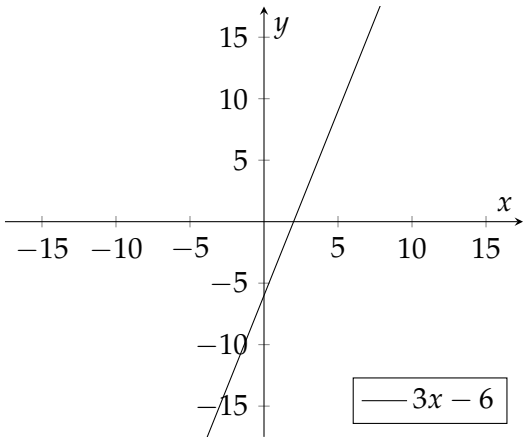

Figure 1.4: Answer to exercise 1.1.23