Function Graphs

For each of the following function definitions, give the graph of the function. Say whether the function is partial or total. We will limit ourselves to integer values for this exercise. If the function is partial, state where the function is defined.

For example, the graph of

$$\texttt{f(x)} = \texttt{if x} > 0 \texttt{ then x} + 2 \texttt{ else x/0}$$

is the set of ordered pairs

$$\{\langle x, x+2\rangle \mid x > 0 \wedge x \in \mathbb{Z}\}$$

This example is a partial function. It is defined on all integers greater than 0 and is undefined on integers less than or equal to 0.

Functions:

1. $\texttt{f(x)} = \texttt{if x} + 2 > 3 \texttt{ then x} * 5 \texttt{ else x/0}$
2. $\texttt{f(x)} = \texttt{if x} < 0 \texttt{ then 1 else f(x} - 2)$
3. $\texttt{f(x)} = \texttt{if x} = 0 \texttt{ then 1 else f(x} - 2)$