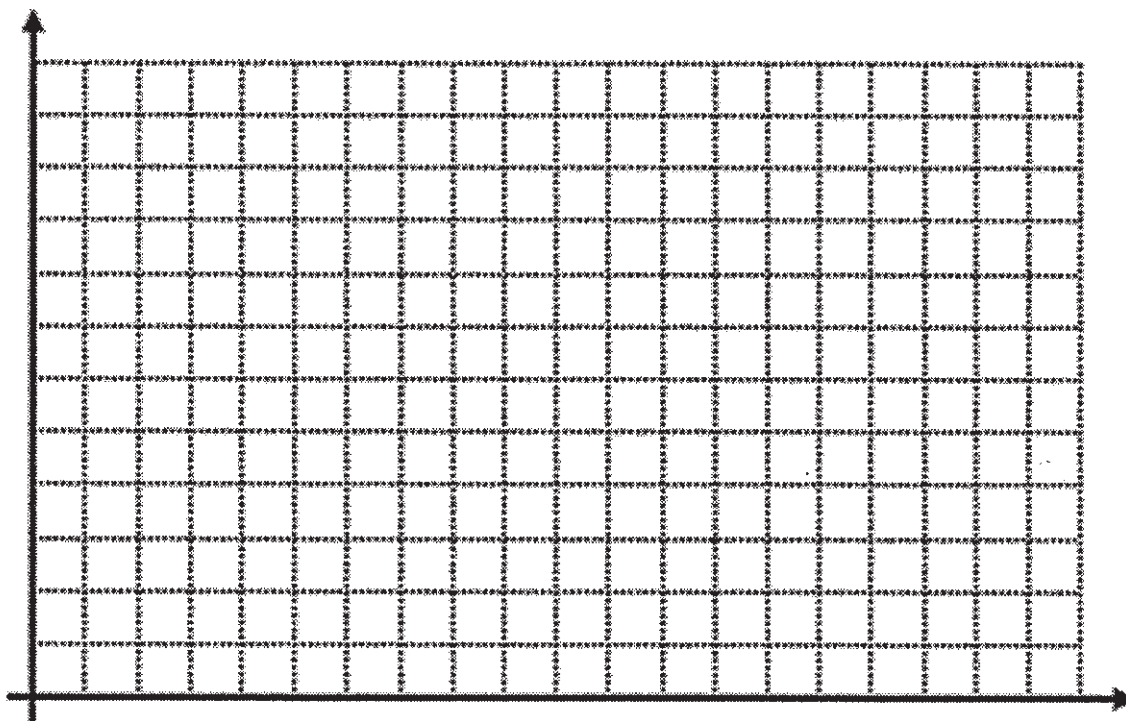
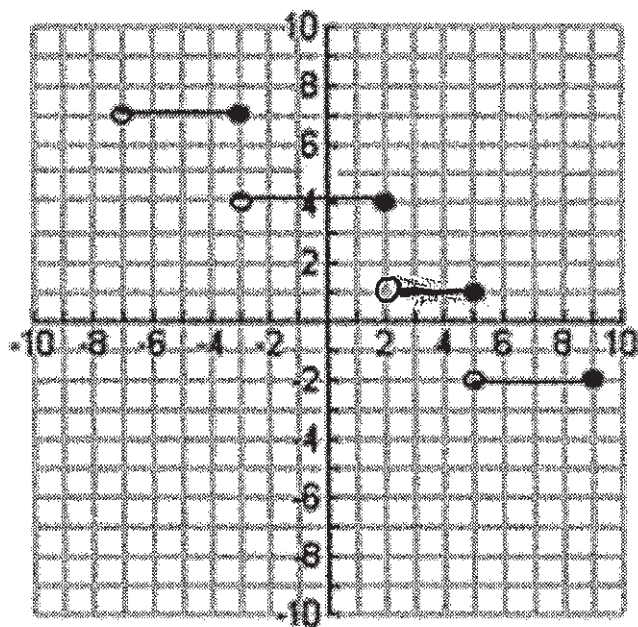


- 1) Every avid ebayer knows that shipping is an important consideration when listing an item for auction. For infrequent selling, there is not much money to be gained or lost on the transaction, but for the diehard, inaccurate shipping costs can lead to stacked losses over time. Knowing the postal rate scale and what to charge for a given item is paramount. The cost  $C$  (in dollars) of sending priority mail, depending on the weight (in ounces) of a package up to five pounds is given by the function below

$$C(x) = \begin{cases} 10.50, & 0 < x \leq 15 \\ 12.00, & 15 < x \leq 30 \\ 13.50, & 30 < x \leq 55 \\ 15.00, & 55 < x \leq 70 \\ 15.50, & 70 < x \leq 80 \end{cases}$$



- 2) Given the graph of this step function, find a piecewise constant function that matches the graph.



- 3) Sketch the graph of the function below. What values of  $x$  will make this function true? In other words, where is this function defined, or what is its domain? Why is the range not all real numbers?

$$f(x) = \begin{cases} 1, & 0 \leq x < 1 \\ 3, & 1 \leq x < 3 \\ 5, & 3 \leq x < 5 \\ 7, & 5 \leq x < 7 \end{cases}$$

