

Students were given the following piecewise function and asked to sketch the graph.

$$h(x) = \begin{cases} 3 & x < -2 \\ 2 - x & -2 \leq x < 1 \\ \frac{1}{2}x^2 + \frac{1}{2} & 1 \leq x \leq 3 \\ 2 & x > 3 \end{cases}$$

Four solutions are on the next page. All of them are incorrect. Draw a correct graph for this function $h(x)$, and then for each of the four student solutions, give them a grade out of 5 points for the problem and give feedback to explain to the student what they did wrong. The student should be able to understand what your feedback means and how they could fix this mistake in the future.

