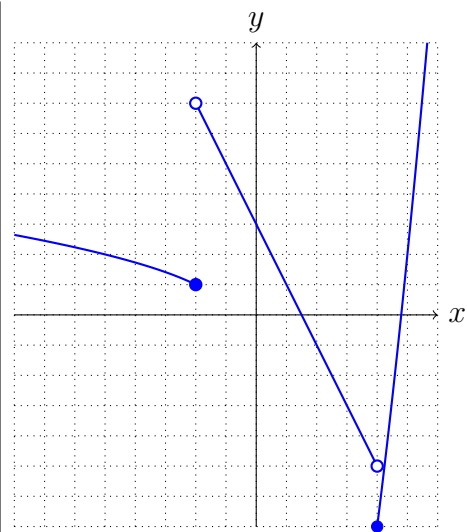


Problem 1: Draw the following piece-wise defined function over all real numbers.

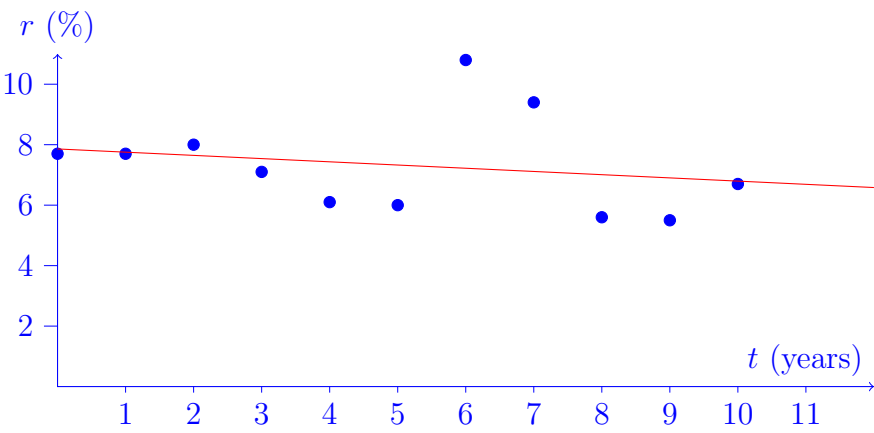
$$f(x) = \begin{cases} \sqrt{-1-x}, & x \leq -2, \\ 3-2x, & -2 < x < 4, \\ x^2-23, & \text{otherwise.} \end{cases}$$



Score: ____/5

Problem 2: Consider the following Canadian unemployment data for those with some post secondary education from 2014 to 2024 given by Stats Canada.

Year	t	Rate (%)
2014	0	7.7
2015	1	7.7
2016	2	8.0
2017	3	7.1
2018	4	6.1
2019	5	6.0
2020	6	10.8
2021	7	9.4
2022	8	5.6
2023	9	5.5
2024	10	6.7



- a. State the best linear model for the given data. Next to the given table, draw a scatterplot with axes correctly labelled including units and dimensions of the window from your graphing calculator.

$$r = 7.859 - 0.1064t$$

Score: ____/4

- b. Use your model to predict the unemployment rate in 2026. Comment on the accuracy of this prediction.

In 2026, $t = 12$, so $r = 6.583\%$.
Extrapolating is always dubious, and the data doesn't look all the linear.

Score: ____/1