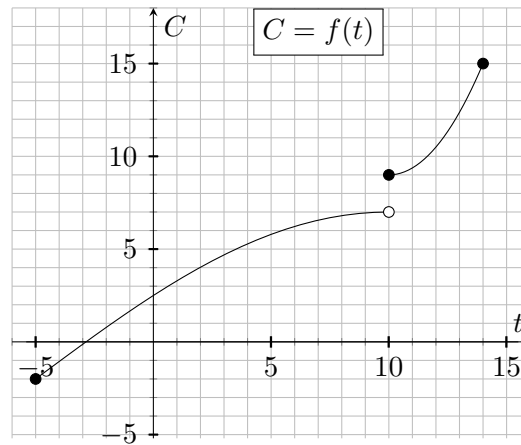


3. [10 points] Let $C = f(t)$ be a piecewise-defined and invertible function for $-5 \leq t \leq 14$. Below is given the graph of f .

Note that f is concave down on $[-5, 10)$ and concave up on $[10, 14]$.



- a. [5 points] Fill in the blanks:

i. [2 points] Give the range of f using **interval notation**: $[-2, 7) \cup [9, 15]$.

Note that part ii is about f^{-1} , **NOT** f . You may estimate your answer if needed.

ii. [3 points] The average rate of change of f^{-1} on $[4, 6]$ is \approx $\frac{3.5}{2}$.

- b. [5 points] Let $g(t) = -f(0.4t + 5)$.

i. [3 points] Find the domain of g . Give your answer using interval notation:

Domain of g : $[-25, 22.5]$

ii. [2 points] Circle **only one** of the four options listed below to complete the following sentence:

On the interval $[-8, -5]$ the function g is ...

increasing and concave up.

decreasing and concave up.

decreasing and concave down.

increasing and concave down.