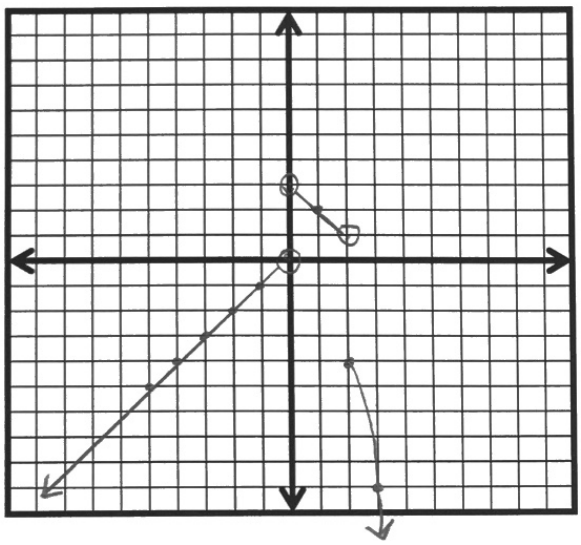
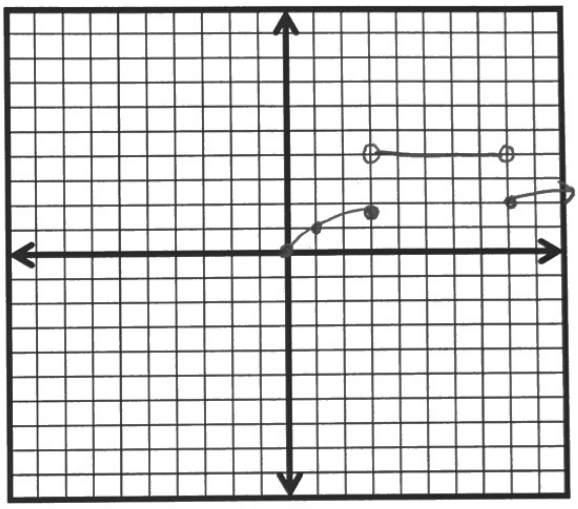
4.5 Piecewise Functions

Graph each function below. Then identify its domain and range.

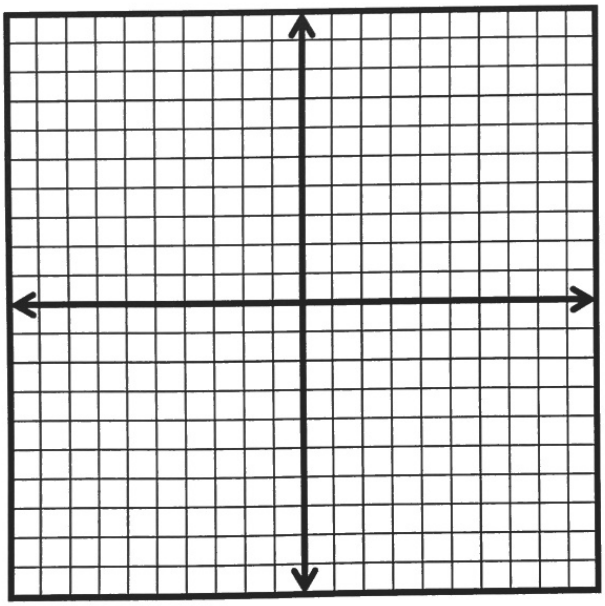
1. $f(x) = \begin{cases} x & if\ x < 0 \\ -x + 3 & if\ 0 < x < 2 \\ -x^2 & if\ x \geq 2 \end{cases}$



2. $f(x) = \begin{cases} \sqrt{x} & if\ x \leq 3 \\ 4 & if\ 3 < x < 8 \\ \sqrt[3]{x} & if\ x \geq 8 \end{cases}$



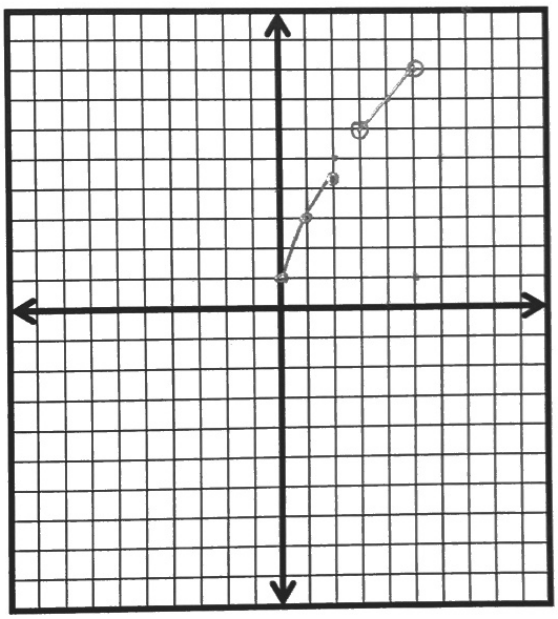
3. $f(x) = \begin{cases} sinx & if\ x \leq -\pi \\ x & if\ \pi < x < 3 \\ 1/x & if\ x \geq 8 \end{cases}$ omit



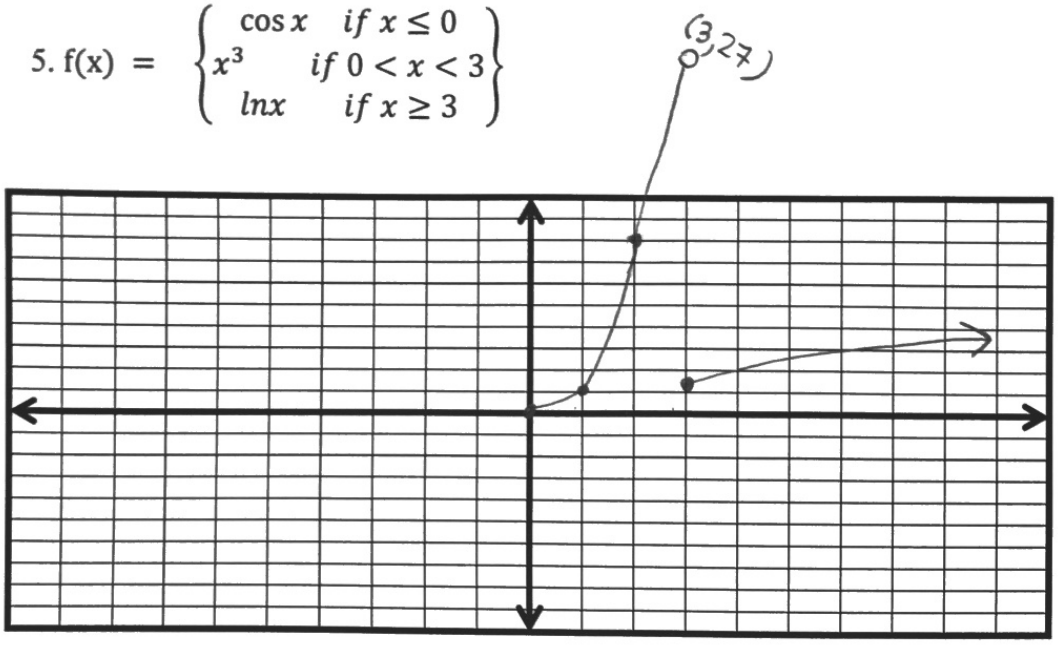
4. $f(x) = \begin{cases} 2\sqrt{x} + 1 & if\ x \leq +2 \\ |x + 4| & if\ 3 < x < 5 \\ (x-4)^2 & if\ x \geq 8 \end{cases}$

change to +2

graph up here



5. $f(x) = \begin{cases} \cos x & \text{if } x \le 0 \\ x^3 & \text{if } 0 < x < 3 \\ \ln x & \text{if } x \ge 3 \end{cases}$



6. $f(x) = \begin{cases} |x| & \text{if } x < 2 \\ 1/x^2 & \text{if } 2 < x < 8 \\ \sqrt[3]{x} & \text{if } x \ge 8 \end{cases}$