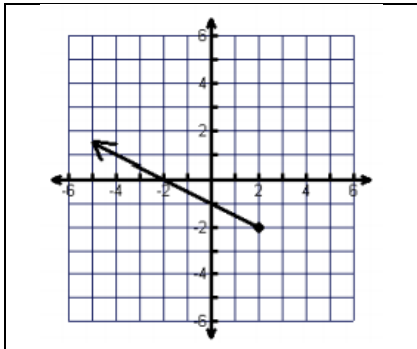
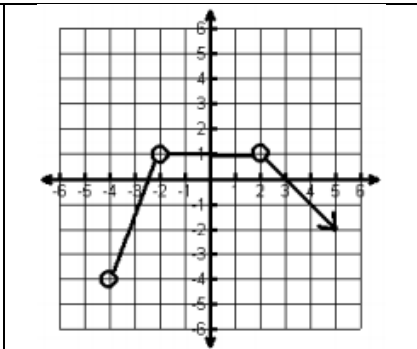


1. Write the following Domains of each graph in Interval notation and set notation



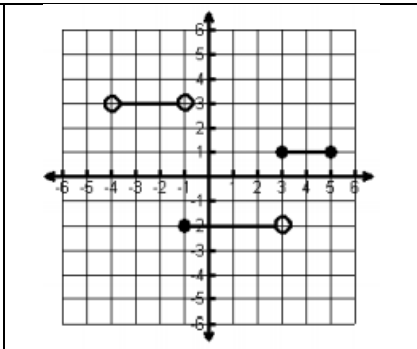
Interval:

Set:



Interval:

Set:



Interval:

Set:

2. Graph the piecewise-defined function. State the domain and range. Identify whether the function is increasing, constant, or decreasing on each interval of the domain.

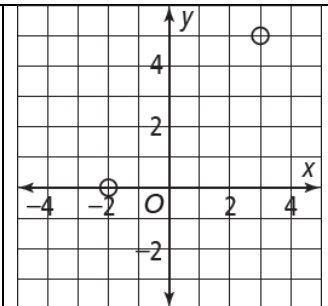
$$f(x) = \begin{cases} 2, & -4 \leq x \leq -2 \\ x + 2, & -2 < x < 3 \\ -3x + 12, & 3 \leq x \leq 5 \end{cases}$$

Domain:

Inc:

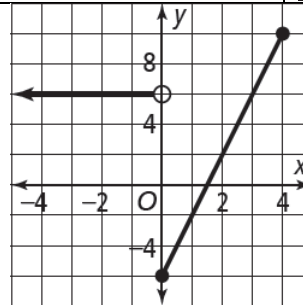
Constant:

Dec:



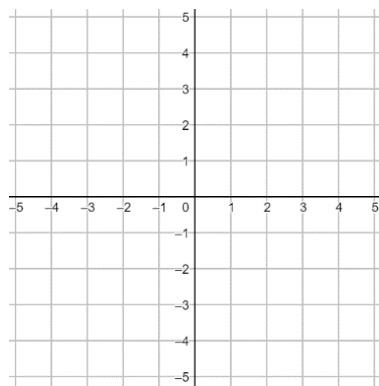
3. Write the rule that defines the piecewise-defined function in the graph.

$$f(x) = \begin{cases} \end{cases}$$

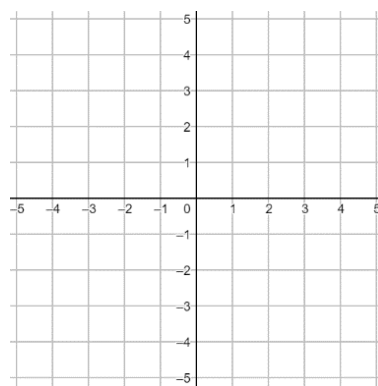


4. Graph each piecewise function

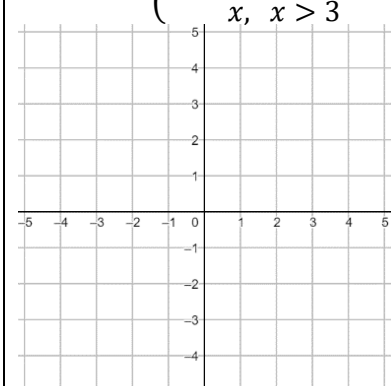
a. $f(x) = \begin{cases} 2x + 1, & x \geq 1 \\ x^2 + 3, & x < 1 \end{cases}$



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



c. $m(x) = \begin{cases} 4, & -3 < x < 0 \\ \frac{2}{3}x - 1, & 0 \leq x \leq 3 \\ x, & x > 3 \end{cases}$



5. A phone company offers a monthly data plan for \$10 a month. The plan includes 2 megabytes of data, and charges \$0.10 per megabyte above the 2 megabytes of data. Write a piecewise-defined function for $T(x)$, the cost for x megabytes of data used in a month.

$$T(x) = \begin{cases} \end{cases}$$