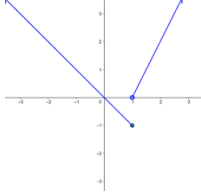
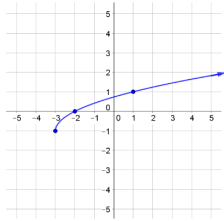
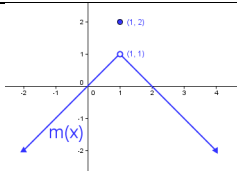
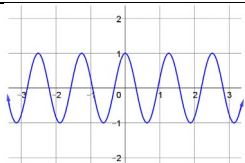
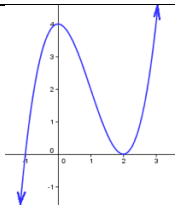
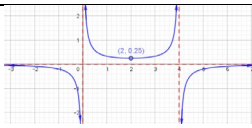
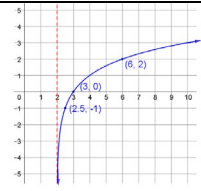
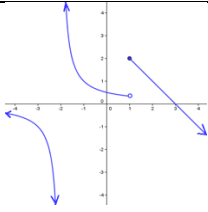
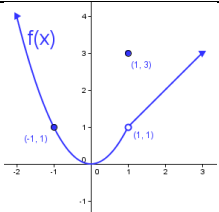


### SM2 4.1: Properties of Functions

Identify the indicated function properties.

1		Domain: $(-\infty, \infty)$ Range: $[-1, \infty)$ Relative Maxima: <b>None</b> Relative Minima: <b>None</b> x-intercept: $(0, 0)$	2		Domain: $[-3, \infty)$ Range: $[-1, \infty)$ Increasing: $(-3, \infty)$ Decreasing: <b>None</b> Roots: $(-2, 0)$ Positive: $(-2, \infty)$ Negative: $[-3, -2)$
3		Domain: $(-\infty, \infty)$ Range: $(-\infty, 1) \cup 2$ Increasing: $(-\infty, 1)$ Decreasing: $(1, \infty)$ Roots: $(0, 0), (2, 0)$ y-intercept: $(0, 0)$	4	 <p>*assume the pattern continues</p>	Domain: $(-\infty, \infty)$ Range: $[-1, 1]$ y-intercept: $(0, 1)$ What is y-value of the maxima? <b>1</b> What is the y-value of the minima? <b>-1</b>
5		Domain: $(-\infty, \infty)$ Range: $(-\infty, \infty)$ Relative Maxima: $(0, 4)$ Relative Minima: $(2, 0)$ Increasing: $(-\infty, 0) \cup (2, \infty)$ Decreasing: $(0, 2)$	6		Domain: $(-\infty, 0) \cup (0, 4) \cup (4, \infty)$ Range: $(-\infty, 0) \cup [4, \infty)$ Increasing: $(2, 4) \cup (4, \infty)$ Decreasing: $(-\infty, 0) \cup (0, 2)$ x-intercept: <b>None</b> y-intercept: <b>None</b>
7		Domain: $(2, \infty)$ Range: $(-\infty, \infty)$ Roots: $(3, 0)$ Positive: $(3, \infty)$ Negative: $(2, 3)$ y-intercept: <b>None</b>			
8		$[-3, 1]$ $f(-3) = -1$ $f(1) = 2$ $\frac{2 - (-1)}{1 - (-3)}$ $\frac{3}{4}$	9		$[-1, 1]$ $f(-1) = 1$ $f(1) = 3$ $\frac{3 - 1}{1 - (-1)}$ $\frac{2}{2} = 1$