Precalc   Domain and Range Interval Notation Practice
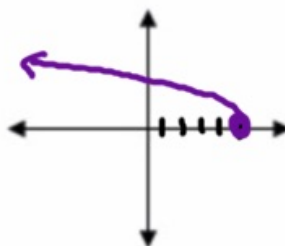
For each below, find the Domain and Range Algebraically and Graphically. State answers in interval notation
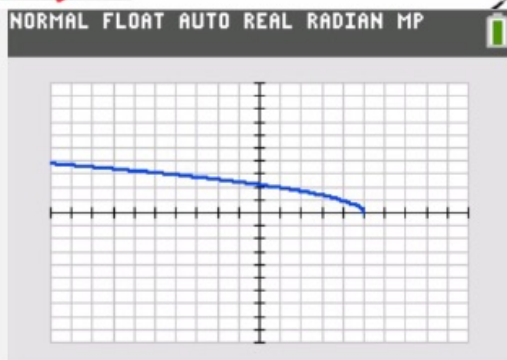
$f(x) = \sqrt{-x+5}$

$-x+5 \geq 0$

$-x \geq -5$

$x \leq 5$

Domain: $(-\infty, 5]$

Range: $[0, \infty)$

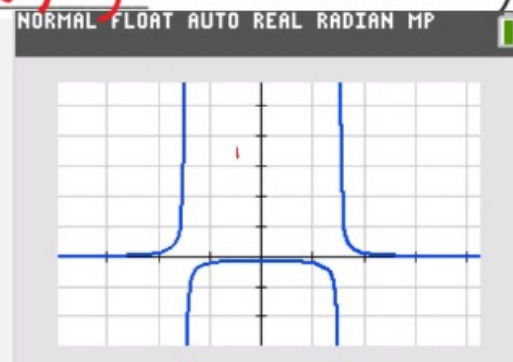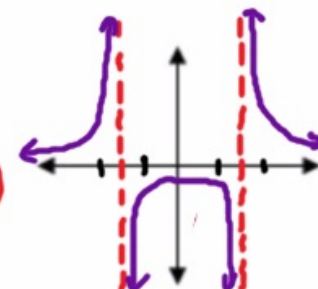$f(x) = \dfrac{1}{4x^2 - 9}$

$4x^2 - 9 = 0$

$(2x-3)(2x+3) = 0$

$2x-3 = 0 \quad 2x+3 = 0$

$x = \tfrac{3}{2} \quad x = -\tfrac{3}{2}$

$(-\infty, -\tfrac{3}{2}) \cup (-\tfrac{3}{2}, \tfrac{3}{2}) \cup (\tfrac{3}{2}, \infty)$

Domain: _____

Range: $(-\infty, 0) \cup (0, \infty)$

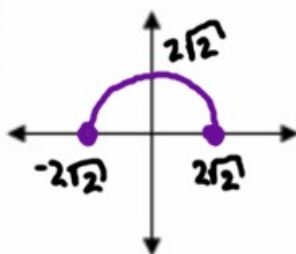NORMAL FLOAT AUTO REAL RADIAN MP

NORMAL FLOAT AUTO REAL RADIAN MP

$f(x) = \sqrt{8 - x^2}$

$8 - x^2 \geq 0 \rightarrow 8 - x^2 = 0$
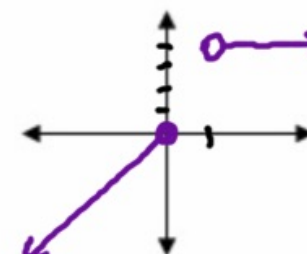
$\sqrt{x^2} = \sqrt{8}$

$x = \pm\sqrt{8}$
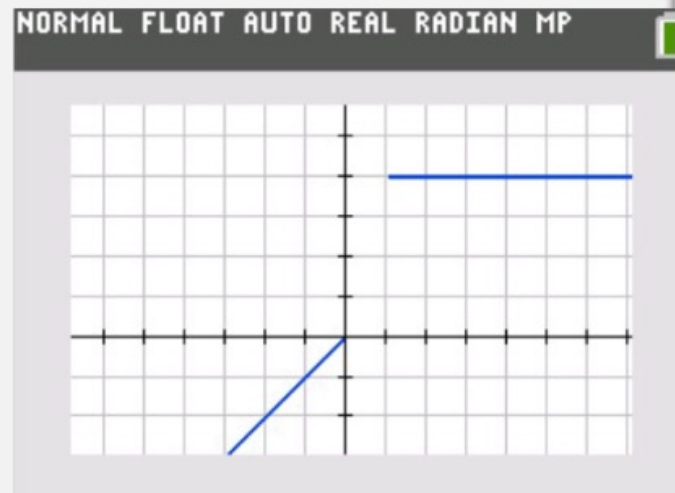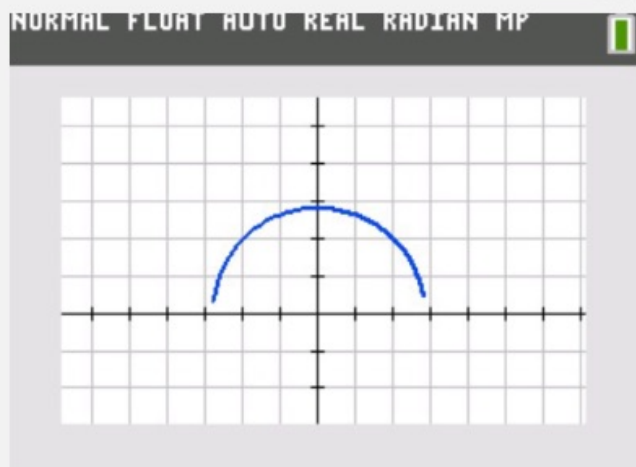
$x = \pm 2\sqrt{2}$

Domain: $[-2\sqrt{2}, 2\sqrt{2}]$

Range: $[0, 2\sqrt{2}]$

$f(x) = \begin{cases} x; & x \leq 0 \\ 4; & x > 1 \end{cases}$

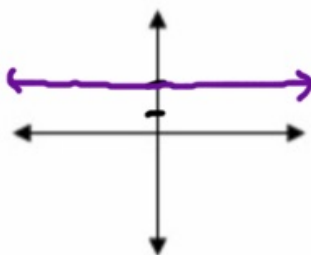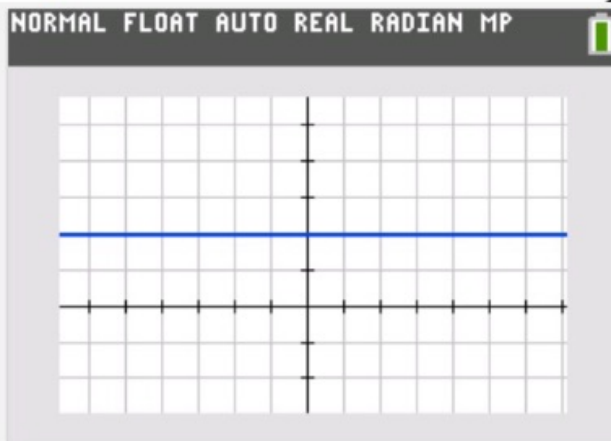Domain: $(-\infty, 0] \cup (1, \infty)$

Range: $(-\infty, 0] \cup \{4\}$

NORMAL FLOAT AUTO REAL RADIAN MP

NORMAL FLOAT AUTO REAL RADIAN MP

$f(x) = 2$

Domain: $(-\infty, \infty)$

Range: $\{2\}$

NORMAL FLOAT AUTO REAL RADIAN MP

$f(x) = \sqrt{6x^2 + x - 1}$

$6x^2 + x - 1 = 0$

$(2x + 1)(3x - 1) = 0$

$2x + 1 = 0 \quad 3x - 1 = 0$

$x = -\frac{1}{2} \quad x = \frac{1}{3}$

$-\frac{1}{2} \qquad \frac{1}{3}$

Domain: $(-\infty, -\frac{1}{2}) \cup (\frac{1}{3}, \infty)$
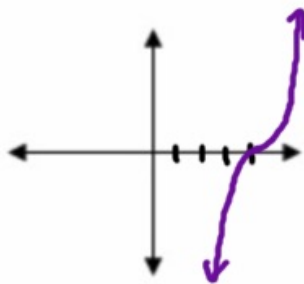
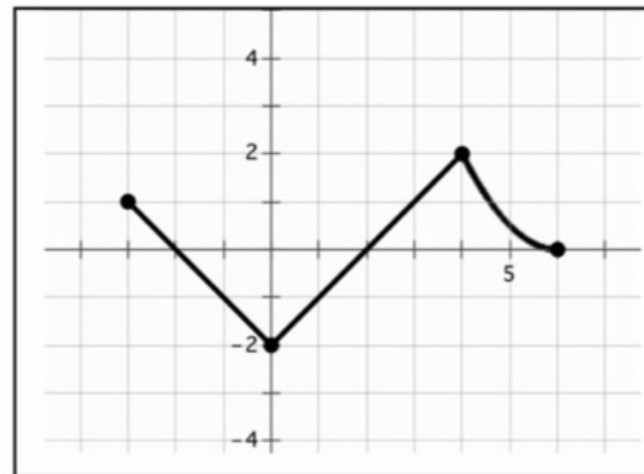Range: $[0, \infty)$

NORMAL FLOAT AUTO REAL RADIAN MP
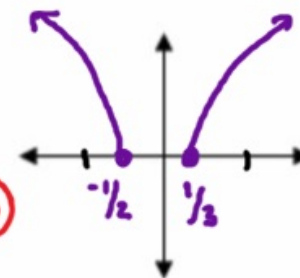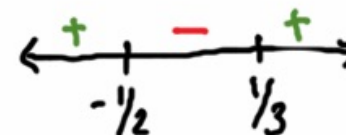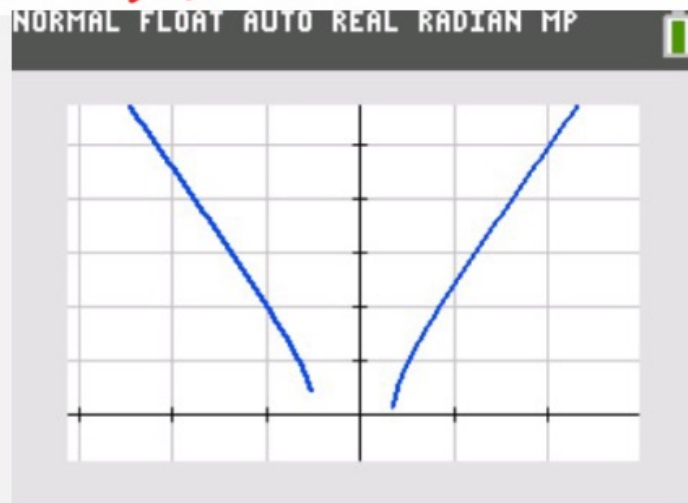
$f(x) = (x-4)^3$

Domain: $(-\infty, \infty)$
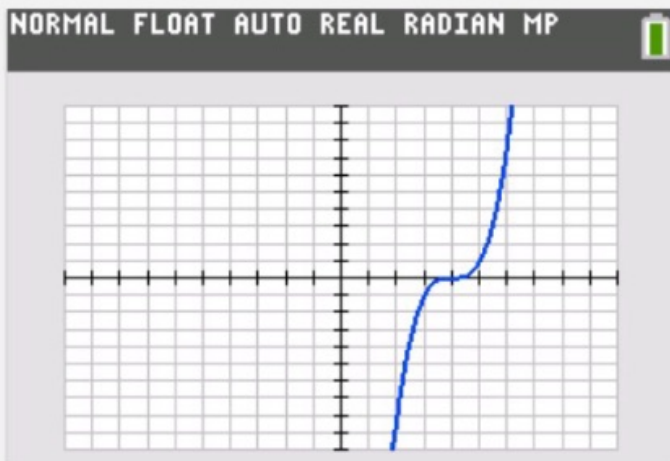
Range: $(-\infty, \infty)$

State the Domain and Range from the Graph

Domain: $[-3, 6]$ Range: $[-2, 2]$

NORMAL FLOAT AUTO REAL RADIAN MP

Made with Doceri

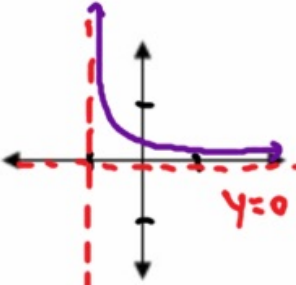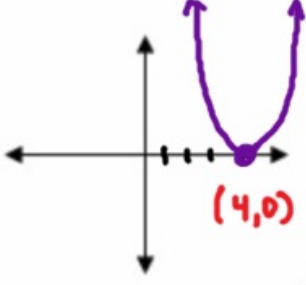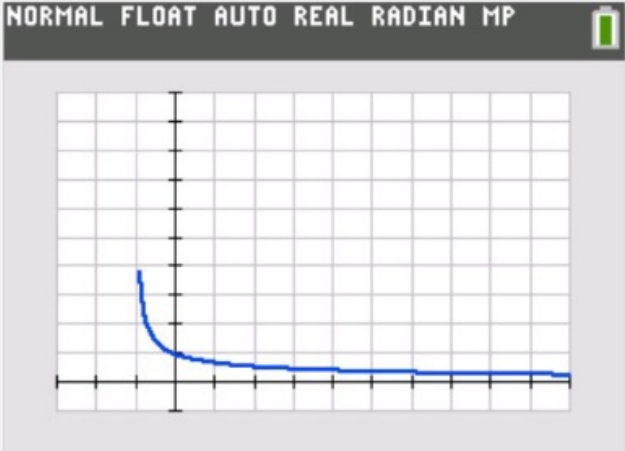## State the Domain and Range from the Graph
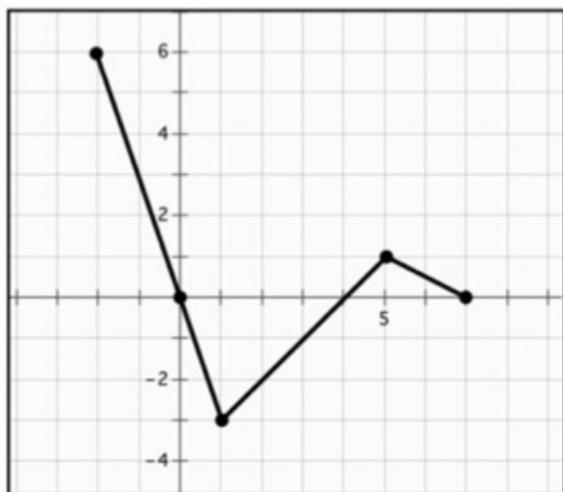
Domain: $[-2, 7]$ Range: $[-3, 6]$

Sketch a possible function with the following Domain and Range

$D: [-7, 1] \cup (2, \infty)$

$R: [-6, -1] \cup (2, \infty)$

See last Page

$f(x) = \dfrac{1}{\sqrt{x+1}}$

$x + 1 > 0$

$x > -1$

Domain: $(-1, \infty)$

Range: $(0, \infty)$

$y = 0$

$x = -1$

NORMAL FLOAT AUTO REAL RADIAN MP

$f(x) = (x-4)^2$

Domain: $(-\infty, \infty)$

Range: $[0, \infty)$

$(4, 0)$

NORMAL FLOAT AUTO REAL RADIAN MP

$D: [-7, 1] \cup (2, \infty)$

$R: [-3, -1] \cup (2, \infty)$