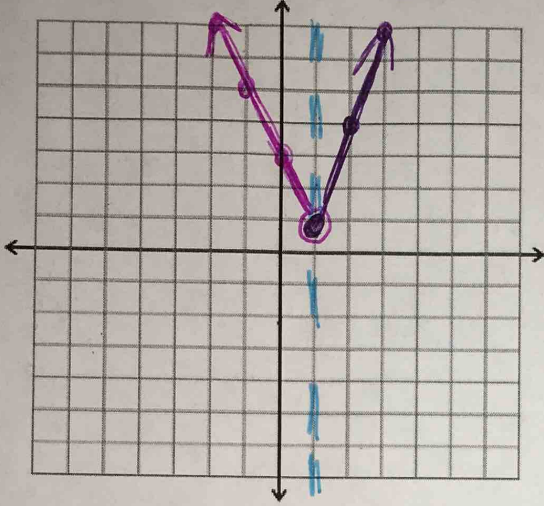


AFM HW 4 – Graphing Piecewise Functions

Name Key

For each problem, graph each function by hand and find the domain and range.

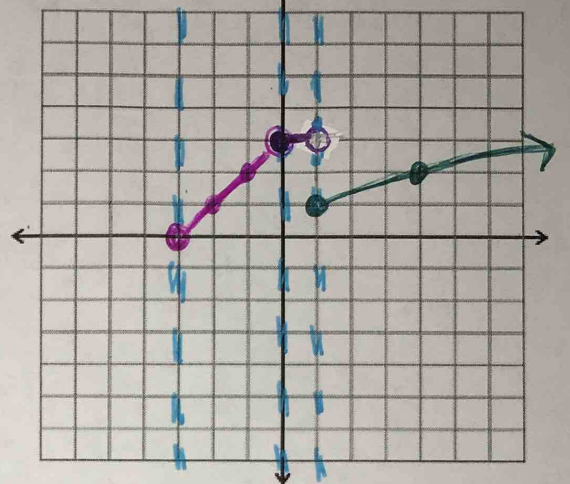
$$1. f(x) = \begin{cases} -2x + 3, & x < 1 \\ 3x - 2, & x \geq 1 \end{cases}$$



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

RANGE: $[1, \infty)$

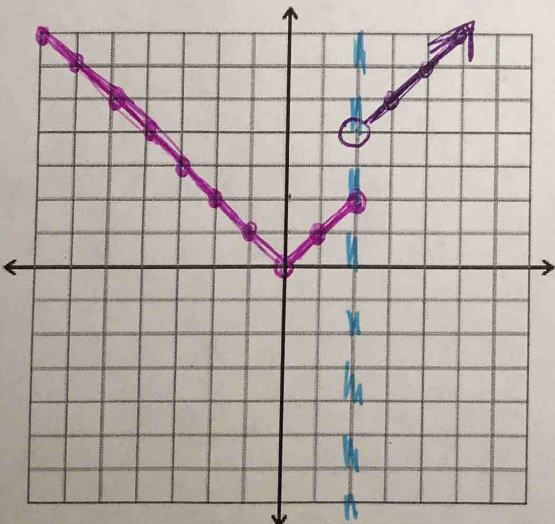
$$2. f(x) = \begin{cases} 3 + x, & -3 \leq x < 0 \\ 3, & 0 \leq x < 1 \\ \sqrt{x}, & x \geq 1 \end{cases}$$



DOMAIN: $[-3, \infty)$

RANGE: $[0, \infty)$

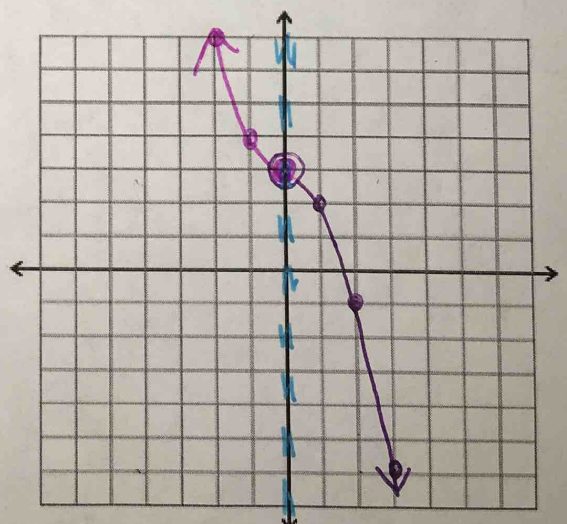
$$3. f(x) = \begin{cases} |x|, & x \leq 2 \\ x + 2, & x > 2 \end{cases}$$



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

RANGE: $[0, \infty)$

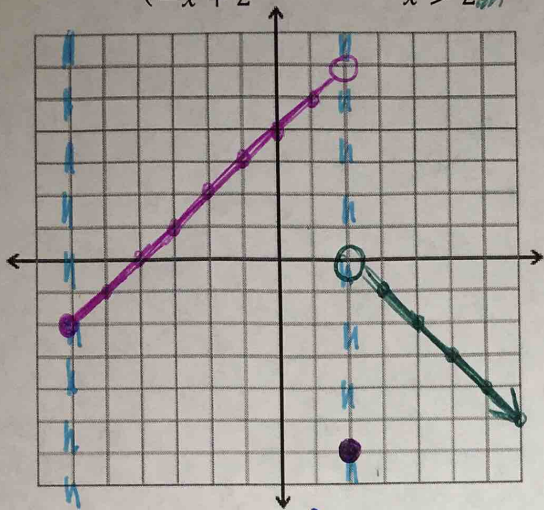
$$4. f(x) = \begin{cases} x^2 + 3, & x \leq 0 \\ -x^2 + 3, & x > 0 \end{cases}$$



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

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

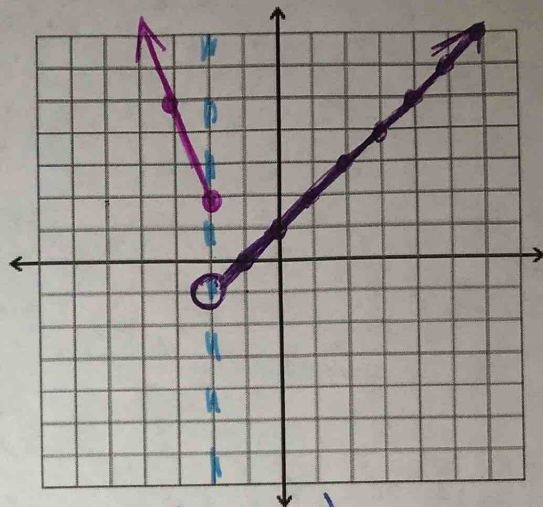
$$5. f(x) = \begin{cases} x+4, & -6 \leq x < 2 \\ -6, & x = 2 \\ -x+2, & x > 2 \end{cases}$$



DOMAIN: $[-6, \infty)$

RANGE: $(-\infty, 6)$

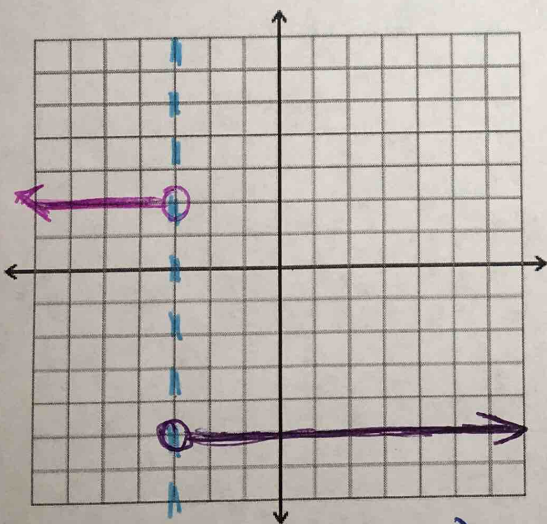
$$6. f(x) = \begin{cases} -3x-4, & x \leq -2 \\ x+1, & x > -2 \end{cases}$$



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

RANGE: $(-1, \infty)$

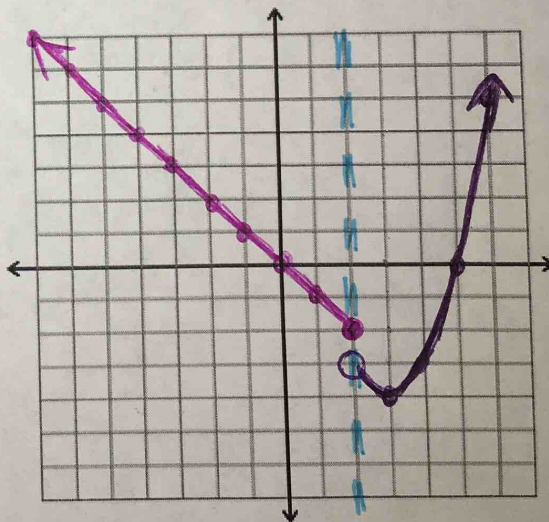
$$7. f(x) = \begin{cases} 2, & x < -3 \\ -5, & x > -3 \end{cases}$$



DOMAIN: $(-\infty, -3) \cup (-3, \infty)$

RANGE: $[-5] \cup [2]$

$$8. f(x) = \begin{cases} -x, & x \leq 2 \\ (x-3)^2 - 4, & x > 2 \end{cases}$$



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

RANGE: $[-4, \infty)$