Pre-Cal Review Day 1

(1) $[-7, 9)$ (2) $(-\infty, 17)$ (3) $(-\infty, \infty)$

(4) 2 (5) -2 (6) neither (7) odd function, symmetric to origin

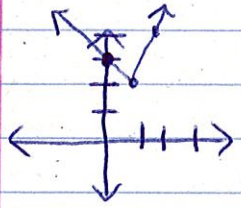
(8) $y - 1 = -\frac{3}{4}(x+2)$ (9) $y = -\frac{1}{2}(x+3)$

(10) D: $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$ Vert asy: $x = 2$ hole $(-2, -\frac{1}{2})$
R: $(-\infty, -\frac{1}{2}) \cup (-\frac{1}{2}, 0) \cup (0, \infty)$ hor asy: $y = 0$

(11) D: $(-\infty, -3) \cup (-3, 4) \cup (4, \infty)$ Vert asy: $x = -3$, $x = 4$
R: $(-\infty, 1) \cup (1, \infty$ hor asy: $y = 1$

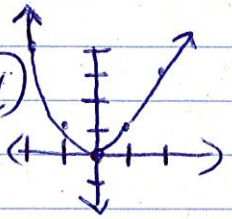
(12) D: $(-\infty, -2) \cup (-2, \frac{3}{2}) \cup (\frac{3}{2}, \infty)$ Vert asy: $x = -2$ hole $(\frac{3}{2}, \frac{2}{7})$
R: $(-\infty, 0) \cup (0, \frac{2}{7}) \cup (\frac{2}{7}, \infty)$ hor asy: $y = 0$

(13)



D: $\mathbb{R}$
R: $y \geq 2$

(14)



D: $\mathbb{R}$
R: $[0, \infty)$

(15)
$$f(x) = \begin{cases} 2, & 0 \leq x < 1 \\ 0, & 1 \leq x < 2 \\ 2, & 2 \leq x < 3 \\ 0, & 3 \leq x \leq 4 \end{cases}$$

(16)
$$f(x) \begin{cases} 2 - x, & 0 < x \leq 2 \\ \frac{5}{3} - \frac{x}{3}, & 2 < x \leq 5 \end{cases}$$

(17)
$$f(x) = \begin{cases} \frac{1}{2}x, & -2 \leq x \leq 0 \\ -2x + 2, & 0 < x \leq 1 \\ -1, & 1 < x \leq 3 \end{cases}$$

(18)
$$y = \begin{cases} \frac{-(x+1)}{x+1}, & x < -1 \\ \frac{x+1}{x+1}, & x > -1 \end{cases}$$

(19)
$$y = \begin{cases} (x-2) + 3, & x \geq 2 \\ -(x-2) + 3, & x < 2 \end{cases}$$