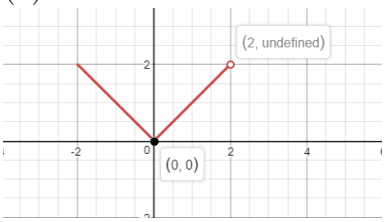
Çankaya University
Department of Mathematics

MATH 113 Exercise Set 3 - Answer Key

1) (a) $\left[\frac{5}{2}, \infty\right)$, (b) $(-\infty, 2) \cup (2, 4) \cup (4, \infty)$, c) $[-\infty, 4)$

2) (a) $h^2 + h$, (b) 21

3) (a)



(b) 1, (c) $[-2, 2)$

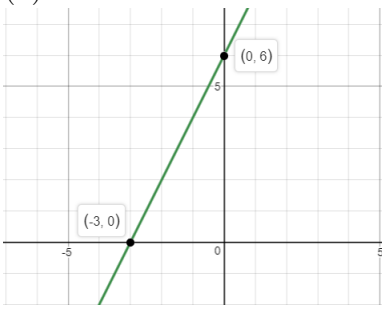
4) $-\frac{2}{(2x+3)(2x+3+h)}$

5) (a) $[-1, 2)$, (b) 1, (c) 2, (d) $\frac{1}{4}$, (e) $\frac{1}{4}$

6) $f(x) = x^6$ and $g(x) = 5x + 3$

7) x-intercepts: $(-4, 0)$ and $(3, 0)$; y-intercept: $(0, 12)$

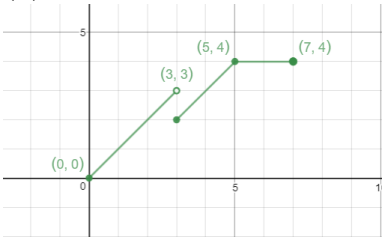
8) (a)



(b) x-intercept: $(-3, 0)$ and y-intercept: $(0, 6)$, (c) $\mathbb{R}$

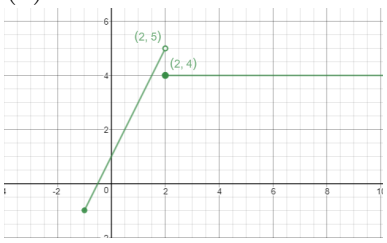
9) (a) $f^{-1}(x) = \frac{x-7}{3}$, (b) $f^{-1}(x) = \frac{x+12}{5}$

10) (a)



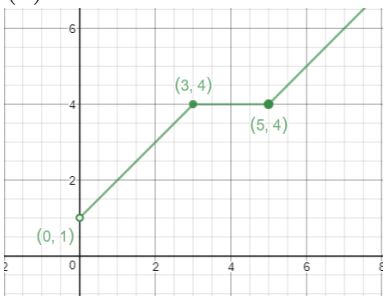
(b) 1, 2, 4, (c) $[0, 7]$

11) (a)



(b) 3, 1, (c) $[-1, \infty)$

12) (a)



(b) 2, 4, 10, (c) $(0, \infty)$

13) $-\frac{2}{3}$

14) 14

15) $k = 19$

16) (a) 7, (b) $(0, -3)$,

17) $\frac{1}{2}$

18) $-\frac{1}{3}$

19) -5

20) $y = 5x$

21) $y = 3x - 5$

22) $y = -2x - 8$

23) $y = -\frac{3}{10}x + \frac{44}{10}$

24) $-\frac{4}{5}$

25) Slope is undefined.

26) $(0, -13)$