Answer of even number problems

Chapter 1

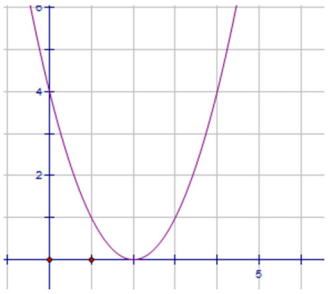
6. Domain of $g(x)$ is [-2, 2]

   Range of $g(x)$ is [0,4]

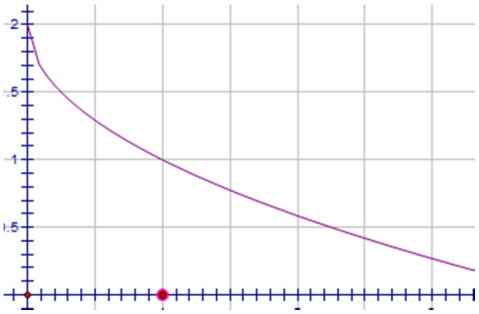
8. Domain of $F(t)$ is $(-\infty, \infty)$

   Range of $F(t)$ is [2,4]

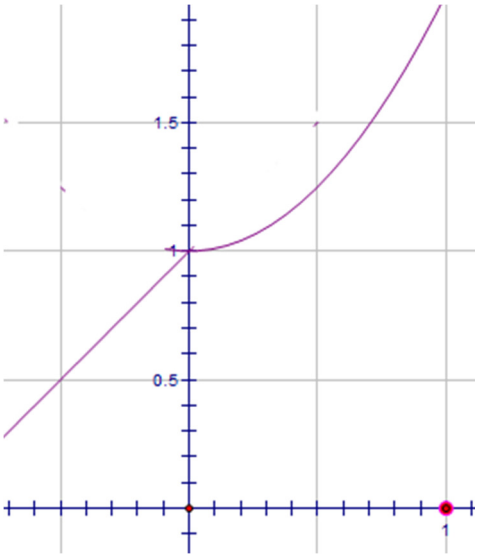
12.




14.




16




Chapter 2

6. The limit is $-\infty$

10. The limit is $-1$

12. The limit is $-\frac{5}{54}$

26. The domain of $g(x)$ is $(-\infty, -3] \cup [3, \infty)$

Since $\sqrt{x^2-9}$ is continuous and $x^2 - 2 \neq 0$ in this set, the quotient function is continuous on its domain.

Chapter 3

2. $x = -4$ discontinuous.

$x = -1$ cluster point

$x = 2$ The function tends to infinite

$x = 5$ The tangent line is vertical

10. $\lim_{h\to 0} \frac{f(x+h)-f(x)}{h} = \lim_{h\to 0} \frac{-7}{(3+x+h)(3+x)} = \frac{-7}{(3+x)^2}$

14. $y' = -\sin(\tan x)\sec^2 x$

16. $y' = \frac{4x+5}{(2x+1)^{\frac{3}{2}}}$

18. $y' = \sqrt{7}\left(x + \frac{1}{x^2}\right)^{\sqrt{7}-1}(1 - \frac{1}{2x^3})$

30. $y' = \frac{\cos\sqrt{x}}{4\sqrt{x\sin\sqrt{x}}}$

36. $y' = \frac{\tan y}{1-x\sec^2 y}$

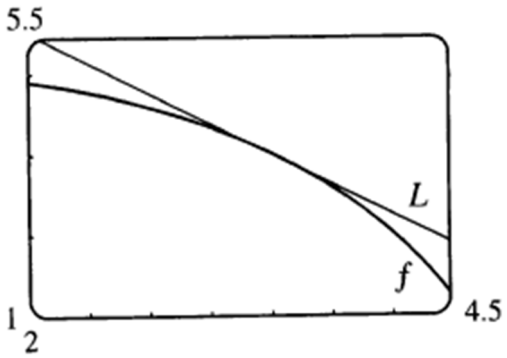
50. $y' = \frac{-(x+2y)}{2x+y}$

78. $\frac{8}{9\pi}$cm/s

80. $\frac{10}{\sqrt{26}}$m/s

82.(a)$y = -\frac{3}{4}x + \frac{25}{4}$

(b)




(c) $2.24 < x < 3.36$

88. The limit is $-\frac{\sqrt{3}}{2}$