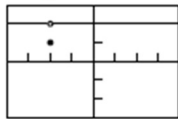


BC Calculus–Semester 1 Final Exam– Review Packet Answers

Chapter 2

1. (a) 1
(B) -2
(c) DNE
(d) 1
2. 10
3. (E)
5. (a) $\frac{2}{3}$
(b) $-\frac{2}{3}$
(c) $y = \frac{2}{3}, y = -\frac{2}{3}$
6. (C)
7. (a) $x = -4, x = 4$
(b) $\infty |x = 4| - \infty$
 $\infty |x = -4| - \infty$
8. (a) e^x
(b) $-2x^3$
9. $x = -2$ - Removeable
 $X = -3$ - Infinite
10. $\frac{-1}{4}$
11. \rightarrow
13. 17
- 14.(a) 20
(b) $y = 20x - 20$
(c) $y = -.05x + 20.1$
15. 45.6 m/s

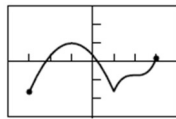
One possible answer



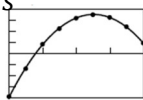
[-4, 4] by [-3, 3]

Chapter 3

1. 4
2. \rightarrow
3. (D)
4. (a) 500
(b) No, $f'(3)$ does not exist
5. (a) $12x^3 - 27x^2 + 5$
(b) $36x^2 - 54x$
6. (a) -12
(b) 360
7. (a) 3 ft
(b) 1 ft/s
(c) 19 ft/s
(d) $18 \text{ ft}/s^2$
(e) $t \approx 1.633 \text{ s}$
8. (a) $18 \text{ ft}/s, 0 \text{ ft}/s, -12 \text{ ft}/s$
9. $\frac{-\sin(x) - \sin(x)\tan(x) - \sec(x)}{(1 + \tan(x))^2}$
10. $(\frac{\pi}{6}, \frac{2}{\sqrt{3}}), (\frac{5\pi}{6}, \frac{-2}{\sqrt{3}})$
11. $2x \cos(x^2 - 1)$
12. $y = 72x - 180$
13. (B)
14. $-\frac{2x+5y}{5x+5y^4}$
15. $\frac{-2}{4x^2+1}$
16. $-4^{-x+3} \ln(4)$
17. (B)



[-4, 4] by [-3, 3]



[0, 4] by [-20, 20]

Chapter 4

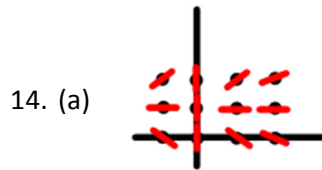
1. C
2. A
3. B
4. E
5. B
6. B
7. D
8. A
9. A
10. C
11. E
12. C
13. C
14. B
15. D
16. B
17. D
18. E
19. $\max = e^1 \quad \min = e^{-1}$

Chapter 5

1. D
2. D
3. E
4. C
5. A
6. C
7. D
8. D
9. B
10. C
11. E
12. E
13. D
14. A
15. D
16. A
17. (a) $g(4) = \frac{5}{2}$, $g(-2) = -6$
 - (b) 4
 - (c) -6
 - (d) $x = 1$
18. 29.5 mi

Chapter 6

1. $\ln|x| + \frac{1}{2}x^2 + c$
2. $\frac{1}{6}\ln^6|x| + c$
3. $\frac{x^2}{2}e^{2x} - \frac{x}{2}e^{2x} + \frac{1}{4}e^{2x} + c$
4. $e^1 - 1$
5. $\frac{1}{3}e^{3x} - 4\sin(x) + c$
6. $\frac{-e^x\cos(x) + e^x\sin(x)}{2} + c$
7. B
8. E
9. C
10. E
11. C
12. D
13. C



- (b) $y = -e^{\left(\frac{-1}{x} + \frac{1}{2}\right)} + 1$
- (c) - .649
- (d) $y(2.6) \approx -.13135$