

HPC Spring Final Exam Review Answer Section

1. -27.6
2. 80
3. 12.5
4. 0.693
5. 104
6. 0
7. 4
8. 3
9. -67
10. 8
11. -212.5
12. 0.25
13. 8.99
14. 12.07
15. 60.351
16. $5 + \frac{1}{5}$
17. $\frac{5}{3}$
18. 0
19. $\pm\infty$
20. $y = 23x - 81$
21. $\frac{f(x)-f(1)}{x-1}$
22. $f'(t) = 2t^5 - 32t^3 + 1$
23. $S'(r) = 8\pi \cdot r$
24. $f'(x) = \frac{3\sqrt{x}}{2} + \frac{1}{\sqrt{x}} - \frac{7}{2x \cdot \sqrt{x}}$
25. $f'(x) = (x + 5) \cdot x^4 \cdot e^x$
26. $\frac{9x \cdot e^{3x}}{(1 + 3x)^2}$
27. $R'(t) = \frac{\left(\frac{-1}{2}\right) \cdot (-6\sqrt{t} + 9t - 4e^{2t} \cdot \sqrt{t} + 4t \cdot e^{2t} + e^{2t})}{\sqrt{t}}$
28. $y = 12x + 6\left(1 - \frac{\pi}{2}\right)$
29. $\frac{dg(x)}{dx} = 2x^1 \cdot \cos(x) - x^2 \cdot \sin(x)$

30. $\frac{dg(x)}{dx} = 9\sec(x) \cdot \tan(x) + (\sec(x))^2$
31. $\frac{dy}{dx} = \cos(x) + 5\sin(x)$
32. $y = 3\sqrt{3} \cdot \left(x - \frac{\pi}{3}\right) + 1$
33. $\frac{(-8 - y - 12x)}{x}$
34. $y = -0.50x + 1.50$
35. $y = 4.33x - 1.33$
36. $-9\sin(x) + \sin(2x), -9\cos(x) + 2\cos(2x)$
37. $3(2x + 8)^{\frac{-5}{2}}$
38. $\frac{-\sin(\ln(3x))}{x}$
39. $\frac{9}{(t \cdot (5 - \ln(t))^2)}$
40. $\frac{-8}{(4u^2 - 16)}$
41. $\frac{-4x}{(5(x^4 - 1))} \cdot \sqrt[5]{\frac{(x^2 + 1)}{(x^2 - 1)}}$
42. $4x^{4x} \cdot (\ln(x) + 1)$
43. -2
44. -65
45. 9
46. $3, \frac{6}{7}, 0$
47. 0
48. $\frac{1}{18}, \frac{-1}{18}, \frac{3}{18}, \frac{-3}{18}$
49. 1
50. $(\pi, -4\pi + 3), (2\pi, -8\pi + 3)$
51. $(-\infty, -6), (6, \infty)$
52. 5.13
53. 265
54. 6.25
55. 22
56. 3.1

57. 43.362672

58. $2.886751 + \frac{\pi}{6}$

$$\frac{2x^2}{2} + \frac{7x^6}{6} + C$$

59.

$$24t - \frac{4t^2}{2} + \frac{6t^3}{3} - \frac{t^4}{4} + C$$

60.

61. 0

62. 10

$$\frac{4}{5} \cdot (x^2 + 3)^5 + C$$

63.

$$2\sqrt{8 + 2x + 3x^2} + C$$

64.

$$\frac{1}{8} \cdot \sec^8(x) + C$$

65.

66. 9.743037

67. 0.544331

68. 0.233333π

69. $\frac{4}{15}\pi$