Section C Comprehensive Review - Answer Key

1. $a_n = 6(3)^{n-1}$
2. $a_n = 80\left(\frac{1}{2}\right)^{n-1}$
3. $a_n = -5(-3)^{n-1}$
4. $a_n = 81\left(\frac{2}{3}\right)^{n-1}$
5. $a_n = 7(4)^{n-1}$
6. $a_n = 160\left(\frac{1}{2}\right)^{n-1}$
7. $a_n = 5(-2)^{n-1}$
8. $a_n = -27\left(-\frac{1}{3}\right)^{n-1}$
9. $a_1 = 9, \quad a_n = 3a_{n-1}$
10. $a_1 = 96, \quad a_n = \frac{1}{2}a_{n-1}$
11. $a_1 = 4, \quad a_n = -3a_{n-1}$
12. $a_1 = -10, \quad a_n = \frac{2}{5}a_{n-1}$
13. $r = \frac{1}{3}$; $a_n = 486\left(\frac{1}{3}\right)^{n-1}$; $a_6 = 2$
14. $r = 3$; $a_n = 8(3)^{n-1}$; $a_5 = 648$
15. $r = 2$; $a_n = 6(2)^{n-1}$
16. $r = -2$; $a_n = -3(-2)^{n-1}$
17. y-intercept = 400; $r = 1.08$; 8% growth
18. y-intercept = 600; $r = 0.7$; 30% decay
19. $y = f(x) = (500)(1.2)^x$; at $x = 3$, $y = 864$
20. $y = f(x) = (2400)(0.75)^x$; at $x = 2$, $y = 1350$
21. $y = f(x) = (1000)(0.8)^x$; at $x = 3$, $y = 512$
22. $y = f(x) = (5)(3)^x$
23. $y = f(x) = (-4)\left(\frac{1}{2}\right)^x$
24. $y = f(x) = (12)(4)^x$
25. $y = f(x) = (20)\left(\frac{3}{4}\right)^x$
26. $y = f(x) = (-7)(5)^x$
27. $y = f(x) = (12)(3)^{x-1}$; $y = f(x) = (4)(3)^x$
28. $y = f(x) = (20)(2)^{x-2}$; $y = f(x) = (5)(2)^x$; $y = f(x) = (10)(2)^{x-1}$
29. $y = f(x) = (54)(3)^{x-3}$; $y = f(x) = (2)(3)^x$; $y = f(x) = (18)(3)^{x-2}$
30. $y = f(x) = \left(\frac{9}{4}\right)\left(\frac{1}{2}\right)^{x-2}$; $y = f(x) = (9)\left(\frac{1}{2}\right)^x$; $y = f(x) = \left(\frac{9}{2}\right)\left(\frac{1}{2}\right)^{x-1}$
31. $y = f(x) = (16)\left(\frac{1}{2}\right)^{x-4}$; $y = f(x) = (256)\left(\frac{1}{2}\right)^x$
32. $y = f(x) = (-18)(3)^{x-2}$; $y = f(x) = (-2)(3)^x$; $y = f(x) = (-6)(3)^{x-1}$