

Chapter 12, 11.5 Review Solutions

- 1) 56
- 2) $s_1 = 4, s_2 = 10, s_3 = 16, s_4 = 22, s_5 = 28$
- 3) $c_1 = 4, c_2 = 8, c_3 = \frac{64}{3}, c_4 = 64, c_5 = \frac{1024}{5}$
- 4) $a_n = 2n - 3$
- 5) $a_n = (-1)^{n+1} \cdot 4n$
- 6) $a_1 = 5, a_2 = 3, a_3 = 1, a_4 = -1$
- 7) $3 + 4 + 5 + \dots + (n + 2)$
- 8)
$$\sum_{k=3}^{10} k^2$$
- 9) a) 15 b) 12
- 10) $d = -5; s_1 = 4, s_2 = -1, s_3 = -6, s_4 = -11$
- 11) $a_n = 94 - 10n; a_8 = 14$
- 12) 220
- 13) $a_1 = 73, d = -5, a_n = a_{n-1} - 5$
- 14) 34980
- 15) 25
- 16) a) $r = 3; s_1 = 3, s_2 = 9, s_3 = 27, s_4 = 81$
 b) $r = \frac{3}{5}; t_1 = \frac{3}{5}, t_2 = \frac{9}{25}, t_3 = \frac{27}{125}, t_4 = \frac{81}{625}$
- 17) Geometric; $r = -3$
- 18) $a_5 = 2500; a_n = 4 \cdot (5)^{n-1}$
- 19) $a_8 = 128$
- 20) $a_n = 7 \cdot 2^{n-1}$
- 21) $a_n = 3 \cdot (3)^{n-1}$
- 22) 726
- 23) Converges; $\frac{9}{2}$
- 24) a) 10 b) 45
- 25) a) $625x^4 - 1000x^3 + 600x^2 - 160x + 16$
 b) $1024x^5 + 2560x^4 + 2560x^3 + 1280x^2 + 320x + 32$
- 26) a) $972x$ b) $9375x$
- 27) a) $\frac{-1}{x+2} + \frac{-2}{x+1} + \frac{-3}{(x+1)^2}$ b) $\frac{1}{x} + \frac{x-1}{x^2+4}$
 c) $\frac{-3}{x-3} + \frac{4}{x-4}$