

Answers

Lesson 11.2

- yes; $d = 3$
- no
- yes; $d = 2.5$
- no
- yes; $d = \frac{3}{5}$
- yes; $d = -2.3$
- $t_n = 25 - 9n$
- $t_n = 8n - 23$
- $t_n = 3n + 10$
- $t_n = 12n - 37$
- $t_n = 11n - 2$
- $t_n = 9.9 - 1.3n$
- 50, 150, 250, 350
- 7.5, 10, 12.5, 15
- 20, -12, -4, 4
- 25, 65, 105, 145
- 8.5, 9, 9.5, 10
- 15, -27, -39, -51
- 5, 2, and 9
- 52, 64, 76, and 88
- 62 and 74
- 10.5, 14, and 17.5
- 34, 28, and 22
- 2, 4, 10, and 16

Lesson 11.3

- 350
- $16\frac{1}{2}$
- 165
- 2905
- 711
- 1482
- 25,425
- 360
- 1300
- 9555
- 9555
- 330
- 990
- 165
- 239.25
- 1914
- $528\sqrt{5} \approx 1180.64$
- 84
- 132
- 590
- 228
- 795
- 351

Lesson 11.4

- no
- yes; $r = 0.4$
- yes; $r = -\frac{3}{5}$
- yes; $r = 1.5$
- yes; $r = \frac{2}{3}$
- no
- 18, -36, 72, -144
- 4, -10, -25, -62.5, -156.25
- 10, 5, 2.5, 1.25
- 0.625 or -0.625
- $32\sqrt{2}$ or $-32\sqrt{2}$
- $1640\frac{1}{4}$ or $-1640\frac{1}{4}$
- $t_n = 250\left(\frac{2}{5}\right)^{n-1}$
- $t_n = -30(-0.2)^{n-1}$

- $t_n = 40(0.8)^{n-1}$
- $t_n = 2\left(\frac{5}{2}\right)^{n-1}$
- $t_n = 80\left(\frac{1}{4}\right)^n$
- $t_n = -\frac{1}{4}(-6)^n$
- 35 and 175
- 14 and -7
- 48, 192, and 768 or -48, 192, and -768
- 15, 18, and 21.6 or -15, 18, and -21.6
- 60, 300, and 1500 or -63, 300, and -1500
- 12, 36, 108, and 324

Lesson 11.5

- 6,973,568,800
- 86.4
- 147
- $\frac{5467}{3125} \approx 1.7$
- 1064.7
- 6144
- 1,572,864
- 12,285
- 3,145,725
- 378
- 1,708,554.00
- 1.67
- 14,348,906
- Show the statement is true for $n = 1$:
 $1^3 = 1$ and $\frac{1^2(1+1)^2}{4} = 1$. Assume that the statement is true for a natural number k .
Then
 $1^3 + 2^3 + 3^3 + \dots + k^3 = \frac{k^2(k+1)^2}{4}$ and
 $1^3 + 2^3 + 3^3 + \dots + k^3 + (k+1)^3 = \frac{k^2(k+1)^2}{4} + (k+1)^3 = \frac{k^2(k+1)^2 + 4(k+1)^3}{4} = \frac{(k+1)^2[k^2 + 4(k+1)]}{4} = \frac{(k+1)^2(k^2 + 4k + 4)}{4} = \frac{(k+1)^2(k+2)^2}{4} = \frac{(k+1)^2[(k+1)+1]^2}{4}$.
Thus, the statement is true for $k+1$.