

Extra Practice #5

1. $\sum_{n=1}^{50} (500 + 20n)$

2. $\sum_{j=1}^{14} (j-2)^2$

3. $6 + 2 + (-2) + (-6) + \dots$ Find S_{25}

4. $110 + 125 + 140 + \dots + 305$

5. $\sum_{k=1}^7 5(4^{k-1})$

6. In a geometric sequence, $a_4 = 36$ and $a_8 = 2916$. Find a_6 .

7. Write an explicit formula for the nth term:

a) $40, 10, 2\frac{1}{2}, \frac{5}{8}, \dots$

b) $17, 13, 9, 5, \dots$

8. Factor:

a) $6x^2 - 5x - 6$

b) $4x^3 - 4x$

c) $x^2 - x - 6$

d) $8x^3 - 125$

e) $27y^6 + 1$

f) $5x^2 + 125$

g) $12y^3 - 27y^2 + 6y$

h) $9x^2 - 4y^2$

Extra Practice #5

1. $\sum_{n=1}^{50} (500 + 20n)$

2. $\sum_{j=1}^{14} (j-2)^2$

3. $6 + 2 + (-2) + (-6) + \dots$ Find S_{25}

4. $110 + 125 + 140 + \dots + 305$

5. $\sum_{k=1}^7 5(4^{k-1})$

6. In a geometric sequence, $a_4 = 36$ and $a_8 = 2916$. Find a_6 .

7. Write an explicit formula for the nth term:

a) $40, 10, 2\frac{1}{2}, \frac{5}{8}, \dots$

b) $17, 13, 9, 5, \dots$

8. Factor:

a) $6x^2 - 5x - 6$

b) $4x^3 - 4x$

c) $x^2 - x - 6$

d) $8x^3 - 125$

e) $27y^6 + 1$

f) $5x^2 + 125$

g) $12y^3 - 27y^2 + 6y$

h) $9x^2 - 4y^2$

Extra Practice #5 answers:

1. 50,500

2. 651

3. -1050

4. 2905

5. 27,305

6. 324

7.

a) $a_n = 40\left(\frac{1}{4}\right)^{n-1}$

b) $a_n = 17 - 4(n-1)$ or $a_n = 21 - 4n$

8.

a) $(3x+2)(2x-3)$

b) $4x(x+1)(x-1)$

c) $(x-3)(x+2)$

d) $(2x-5)(4x^2+10x+25)$

e) $(3y^2+1)(9y^4-3y^2+1)$

f) $5(x^2+25)$

g) $3y(4y-1)(y-2)$

h) $(3x-2y)(3x+2y)$

Extra Practice #5 answers:

1. 50,500

2. 651

3. -1050

4. 2905

5. 27,305

6. 324

7.

a) $a_n = 40\left(\frac{1}{4}\right)^{n-1}$

b) $a_n = 17 - 4(n-1)$ or $a_n = 21 - 4n$

8.

a) $(3x+2)(2x-3)$

b) $4x(x+1)(x-1)$

c) $(x-3)(x+2)$

d) $(2x-5)(4x^2+10x+25)$

e) $(3y^2+1)(9y^4-3y^2+1)$

f) $5(x^2+25)$

g) $3y(4y-1)(y-2)$

h) $(3x-2y)(3x+2y)$