

7.3 Practice Set

1. What is the meaning of the symbol Σ ?

Evaluate each of the following series.

2. $\sum_{k=1}^4 k$

3. $\sum_{k=1}^{10} (-1)^k$

4. $\sum_{m=3}^7 (m^2 + 1)$

5. $\sum_{i=4}^6 \frac{i!}{(i-1)!}$

6. $\sum_{k=2}^5 \left(\frac{1}{2k} \right)$

7. $\sum_{n=1}^4 \left(\frac{7n}{n+5} \right)$

Expand the series.

8. $\sum_{k=1}^{10} x^{k-1}$

9. $\sum_{j=5}^{10} (j-4)! x^j$

10. $\sum_{k=1}^5 k^x$

11. $\sum_{i=1}^3 (x-2)^i$

Write each of the following series in summation notation. (Hint: You must find the general term for the associated sequence.)

12. $1 + 3 + 5 + 7 + 9$

13. $4 + 12 + 36 + 108$

14. $\frac{1}{2} + \frac{1}{3} + \frac{1}{4} + \frac{1}{5} + \frac{1}{6}$

15. Find the sum of the first four terms of the sequence whose general term is $a_n = (n + 7)(n + 4)$

Distributed Practice Problems

Graph the following function. Give the x-intercept(s), y-intercept, domain, range, and the equation(s) of any asymptote(s).

16. $y = -2x^2 + 6x + 8$

17. $y = -|x + 3| - 5$

18. $y = \log_3(x - 6)$

19. $\frac{(x-2)^2}{25} + \frac{(y+7)^2}{9} = 1$

20. $4(x + 3)^2 - 4(y - 1)^2 = 16$