

Extra Practice Sec. 10.1, 10.2 & 10.5

Find the first four terms for each sequence.

1. $a_1 = 2$
 $a_n = 5 - 2a_{n-1}$

2. $a_1 = 2$
 $a_n = 2^{n-1} + 1$

Write a possible explicit rule for the n^{th} term of each sequence.

3. 6, 11, 16, 21, 26, ...

4. $\frac{1}{3}, \frac{2}{4}, \frac{3}{5}, \frac{4}{6}, \frac{5}{7}, \dots$

Write the explicit rule for:

5. $3+5+7+9+\dots$

6. Simplify: $\frac{n!(n-3)!}{(n+1)!(n-5)!}$

Find the 9th term of the arithmetic sequence:

7. 21, 32, 43, 54, 65, ...

8. Expand using Pascal's Triangle: $(2x - 5y)^4$

Find the 9th term of the arithmetic sequence.

9. $a_4 = 5$ $a_6 = 11$

10. Find the binomial coefficient using: ${}_{12}C_5$

Find the indicated Sum. For the Arithmetic series:

11. S_{13} for $4 + 7 + 10 + 13 + \dots$

Find the missing term of the arithmetic sequence.

12. 14, , , 23

Answers: Extra Practice 10.1, 10.2, and 10.5

1) 2, 1, 3, -1 2) 2, 3, 5, 9 3) $a_n = 5n + 1$ 4) $a_n = \frac{n}{n+2}$ 5) $S_n = 2n + 1$ or $\sum_{n=1}^{\infty} 2n + 1$ 6) $\frac{(n-3)(n-4)}{n+1}$ 7) $a_9 = 109$

8) $16x^4 - 160x^3y + 600x^2y^2 - 1000xy^3 + 625y^4$ 9) $a_9 = 20$ 10) 792 11) $S_{13} = 286$ 12) 17, 20