

Chapter 11 1 - 4 Review College Algebra

- 1) List the first five terms of the arithmetic sequence with  $a_1 = 52$  and  $d = 3$ .

52 55 58 61 64

- 2) Find the 33<sup>rd</sup> term of the sequence 65, 54, 43 . . .

- 287

- 3) Now find the sum of the sequence above.

- 3663

- 4) Find five arithmetic means between 24 and 39.

26.5 29 31.5 34 36.5

- 5) Which term of -15, 12, 39, . . . is 309?

13<sup>th</sup>

- 6) Find the sum of the odd integers from 33 to 999.

249,744

- 7) Find the sum of the first 100 terms of the arithmetic series with  $a_1 = -46$  and  $d = 19$ .

89,450

- 8) Find the first 3 terms of the arithmetic sequence with a first term of 7, a last term of 139, and a sum of 876.

7, 19, 31

- 9) Find the 7<sup>th</sup> term of the geometric sequence with a first term of 2 and a common ratio of -3

1458

- 10)  $\sum_{i=1}^{22} (3i^2 + 5i - 8) = 12,474$

- 11) Find the first three terms of the geometric sequence if the 5<sup>th</sup> term is 80 and 8<sup>th</sup> term is -640

$$5, -10, 20$$

- 12) Find the sum of the first 7 terms of a geometric series whose first term is -3 and whose common ratio is -2.

$$-129$$

- 13) Find the sum of:  $12 + 4 + \frac{4}{3} + \dots = 18$

- 14) Which term of  $-\frac{3}{8}, \frac{-3}{2}, 6, \dots$  is -384?  $6^{\text{th}}$

- 15) Expand  $(x - 2b)^4$   $x^4 - 8x^3b + 24x^2b^2 - 32xb^3 + 16b^4$

- 16) Find the 6<sup>th</sup> term in the expansion of  $(2m - 3n)^7$   $20,412 m^2 n^5$

- 17) Find the 2<sup>nd</sup> term in the expansion of  $(a - 3b)^5$   $-15a^4b$

- 18) Show definition and evaluate:  $\frac{18!}{12!} = \frac{18 \cdot 17 \cdot 16 \cdot 15 \cdot 14 \cdot 13 \cdot (2!)}{12!} = 13,366,080$

- 19) Show definition and evaluate:  $\frac{13!}{6!7!} = \frac{13 \cdot 12 \cdot 11 \cdot 10 \cdot 9 \cdot 8 \cdot 7!}{6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 \cdot 7!} = 1716$