College Algebra Semester 2 Practice Final Exam #2

NO calculator

11. Find the first 5 terms of the sequence whose nth term is $a_n = n!$.

(assume n begins with 0)

a. 0, 1, 2, 6, 24   b. 0, 1, 2, 6, 12   c. 1, 1, 2, 6, 12   d. 1, 1, 2, 6, 24

12. What are the first five terms of the arithmetic sequence with a_3 = 10 and a_{12} = 46.

13. Which of the following is a geometric sequence?

    a. 1, -3, 5, -7, 9, . . .   b. 6, 3, 0, -3, -6, . . .

    c. 2, 4, 8, 16, 32, . . .   d. -1, 0, -1, 0, -1, . . .

14. Evaluate $\sum\limits_{n=1}^{\infty} 3(-\frac{1}{2})^n$

    a. 6   b. 4   c. 2   d. 0

15. Expand $(2x - 3)^3$

    a. $8x^3 - 324x^2 + 324x - 27$ b. $8x^3 - 36x^2 + 54x - 27$

    c. $2x^3 - 18x^2 + 54x - 27$ d. $8x^3 - 12x^2 + 27x - 27$

16. How many ways can a computer randomly generate an integer that is divisible by 5 from the integers 1-25?

    a. 4   b. 5   c. 6   d. 7

17. If your wardrobe consists of three jackets, three skirts, and four blouses, how many different outfits consisting of a jacket, a skirt, and a blouse be made?

18. Two cards are randomly selected from a standard deck of 52 playing cards. Find the probability the first card will be an ace and the second card will be a 10 assuming the first card is replaced prior to drawing the second card? Assume further this is a standard deck with 4 aces and 4 10s.

    a. $\dfrac{1}{52}$ b. $\dfrac{8}{663}$ c. $\dfrac{3}{204}$ d. $\dfrac{2}{13}$

19. What is the probability of drawing an 8 or a Queen from a standard deck of cards?

20. Two six-sided dice are tossed. What is the probability that the total of the two dice is 8?