**Openers #10 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

*Each day when you come into class, there will be a problem projected for you to complete. Find the appropriate box to complete the problem in and work on it when you arrive.*

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| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 10-1  Find the first four terms and the eighth term of the sequence. {(n-1)(n-2)(n-3)}  Find the first five terms of the recursively defined infinite sequence. a1=2, ak+1 = (ak)1/k  Find the sum.  Find the sum. |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 10-2  Find the fifth term, the tenth term, and the nth term of the arithmetic sequence. 2,6,10,14,…  Find the common difference for the arithmetic sequence with a4 = 14, a11 = 35.  Find the specified term of the arithmetic sequence that ha the two given terms.  a11; a1 = 2 +; a2 = 3.  Find the sum. |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 10-3  Find the fifth term, the eighth term, and the nth term of the geometric sequence. 2,6,18,54,…  Given a geometric sequence with a2 = 3 and a5 = -81, find r and a9.  Find the sum.  Find the sum of the infinite geometric series if it exists. 250 – 100 + 40 – 16 + … |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_**  **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_**  **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 10-5  Evaluate the expression.  Rewrite the expression so it does not contain factorials.  Use Pascal’s Triangle to simplify. (a-b)5  10-6  Find the number. P(5,1)  Simplify the permutation. P(n,2)  How many four digit numbers can be formed from the digits 1,2,3,4,5,6 if repetitions are   1. not allowed. 2. allowed   In how many ways can 13 cards be selected from a deck of cards?  In how many ways can 13 cards be selected to obtain 5 spades, 3 hearts, 3 clubs, and 2 diamonds?  10-7  Find the number. C(6,2)  Find the number of distinguishable permutations of the letters in the word *bookkeeper*.   1. If a student must answer 8 of 12 questions on an examination, how many different selections of questions are possible? 2. How many selections are possible if the first three questions must be answered?   10-8  A single card is drawn from a deck. Find the probability that the card is   1. a heart 2. a heart or a diamond 3. a heart, diamond or a club   A single die is tossed. Find the probability and the odds that the die is   1. an even number 2. a number divisible by 5 3. an even number or a number divisible by 5   A single card is drawn from a deck. Find the probability that the card is either red or a face card.  If 6 black, 5 red, 4 white, and 2 green disks are to be arranged in a row, what is the number of possible color arrangements.? |