Dear Parents,

Tuesday, April 14, the video provides guidance from the homework given on Monday, April 13.

Here is the link: <https://cobbk12org-my.sharepoint.com/:v:/g/personal/john_white_cobbk12_org/EaeTRjIaMoBCr25DBbmFa0oB4Ne5PzwHRHfZqprve67gyQ?e=KRQgpb>

Wednesday, April 15, we will begin geometric sequences (a new lesson).

The following concept was covered Monday, April 13:

***Arithmetic Sequence***

* An ***arithmetic sequence*** is a sequence in which the pattern of the sequence is being ***added or subtracted***. In other words, the numbers are close together and the difference (difference means subtract) of the consecutive terms is constant. This constant difference is called the common difference and is denoted by d. If the numbers in the list are increasing, then d will be positive. If the numbers in the list are decreasing, then d will be negative.

                    The nth term of an arithmetic sequence with first term                   C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\E9F843BA.tmp and common difference d is given by:

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\3404F3D8.tmp**=**C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\DE3FFFA6.tmp**+ d( n – 1 )**

Only plug in numbers for d and the first term in the sequence. In this formula, ***d*** stands for the ***common difference***. To find ***d***, calculate the following: ***second term minus the first term***.

To find a specific term, just plug in the number of the term that is being asked. For example, to find the 20th then plug in 20 for n.

***Steps to writing a rule for the nth term of the arithmetic sequence and finding a specific term:***

1. First, find C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\8E88D2A4.tmp and d and plug these into the appropriate place in the formula.
2. Then distribute and combine like terms
3. To find a specific term just plug in the number of the term you are looking for

***Example 1***:  7, 4, 1, - 2, - 5, …

D= second number – first number= 4 – 7 = - 3 (d is negative because counting backwards)

                                                                         1 – 4 = - 3

                                                                       -2 – 1 = - 3

                                                                        -5 - - 2= - 3

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\13FF6452.tmp**= 7**

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\4BB01830.tmp**= 7 + - 3(n – 1)**

**If distribute the – 3, then**C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\DA8A9DBE.tmp**= 7 + - 3n + 3. Now combine like terms of 7 and 3**

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\A9DBD07C.tmp**= - 3n + 10**

**If finding the 11th term, then this means n = 11: So, make a substitution (everywhere there is an n, replace it with 11**

**So:**C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\E04297EA.tmp**= 7 + - 3 (11 – 1)**

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\3BD7C788.tmp**= - 23**

***Recursive Rule:*** C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\EB00FED6.tmp***= 7***

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\78268954.tmp***=***C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\C1443E82.tmp***+ d so***C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\770D61E0.tmp***=***C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\F01B82EE.tmp***+ - 3***

***Example 2:*** 4, 6, 8, 10, 12, …

D= second number – first number= 6 – 4 = 2 (d is positive because counting forwards)

                                                                 8 – 6 = 2

                                                                 10 – 8 = 2

                                                                 12 – 10 = 2

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\6B605D2C.tmp**= 4**

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\D9D2B81A.tmp**= 4 + 2(n – 1)**

**If distribute the 2, then**C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\220E4738.tmp**= 4 + 2n - 2. Now combine like terms of 4 and -2**

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\395E8A06.tmp**= 2n + 2**

**If finding the 15th term, then this means n = 15: So, make a substitution (everywhere there is an n, replace it with 11**

**So:**C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\946CAC04.tmp**= 4 + 2 (15 – 1)**

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\68864B2.tmp**= 32**

***Recursive Rule:*** C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\5943D790.tmp***= 4***

C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\66DA741E.tmp***=***C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\809AD5DC.tmp***+ d so***C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\174BA44A.tmp***=***C:\Users\KDC10960\AppData\Local\Microsoft\Windows\INetCache\Content.MSO\264372E8.tmp***+ 2***

Please do not hesitate to email us with questions or concerns.

Have a blessed evening!

Thanks,

Mrs. Crawford

Sprayberry High School

Special Education Teacher