

Quiz/Homework

Quiz

- Two terms in an arithmetic sequence are $a_{40} = 825$ and $a_{122} = -3029$. What is the first term in the sequence?

(a) -4,862	(d) 2,658
(b) -1,196	
(c) 228	(e) 3034
- Find the arithmetic series which sums up all elements of the sequence $x_k = 35 + 17(k - 1)$ from $k = 1$ to 28.
- Which of the following is an expression for the series of numbers from 1 to n ?

(a) $\frac{n(n-1)}{2}$	(d) $\frac{n^2+1}{2}$
(b) $\frac{n^2}{2}$	(e) $\frac{n^2+2}{2}$
(c) $\frac{n(n+1)}{2}$	
- Which of the following could not be the first 4 terms of a geometric sequence?

(a) 4, 16, 64, 256, ...	(d) $\sqrt[2]{5}$, $\sqrt[3]{5}$, $\sqrt[4]{5}$, $\sqrt[5]{5}$, ...
(b) 12, 2, 1/3, 1/18, ...	(e) 6.2×10^4 , 6.2×10^7 , 6.2×10^{10} , 6.2×10^{13} , ...
(c) 1, $\sqrt[3]{3}$, $\sqrt[3]{9}$, 3, ...	
- Write the direct formula for a geometric sequence where the third term is $4/3$ and the fifth term is $64/3$.

Homework

1. A student has 2 pairs of shoes, 4 pairs of pants, 8 shirts, and 2 hats. How many outfits can the student wear to school if he also includes the option of not wearing a hat?
2. Sam has been accepted to 6 colleges and is deciding between 8 majors and 4 minors for each school. How many educational experiences does Sam need to choose from?
3. How many 4-digit numbers can be formed which have no number appearing more than once?
4. A basketball team has 12 players total but only 5 on the court at one time. Of the 5 players on the court, each has a specific position, namely center, power forward, small forward, point guard, and shooting guard. How many unique ways can the coach order his team on the court in the different positions?
5. A diagonal of a polygon is any line that connects two non-adjacent vertices on the interior of the polygon. A regular polygon of size n will have how many unique diagonals?
6. If a class has 25 students, how many possible cohorts of either size 4 or 5 could be created to represent the class in the school spelling bee?