

ALGEBRA 2 TEAM QUESTION #1 FEBRUARY, 1999

Three fair six sided dice are tossed. What is the probability the sum of the dots on the top faces is less than or equal to five? Write your answer as a reduced fraction.

ALGEBRA 2 TEAM QUESTION #2 FEBRUARY, 1999

Given: $A = \sum_{n=1}^5 12$

$$B = \sum_{n=1}^5 12n + 1$$

$$C = \sum_{n=1}^5 (12n + 1)$$

What is the value of $A(C - B)$?

ALGEBRA 2 TEAM QUESTION #3 FEBRUARY, 1999

Suppose each entry in Pascal's triangle is increased by 3.

Under that condition, what is the sum of the entries in the 19th row?

ALGEBRA 2 TEAM QUESTION #4 FEBRUARY, 1999

Consider the cubic equation $x^3 + Bx^2 + Cx + D = 0$

If one root of the equation is 4 and another root is $1 + i$, determine the value of $B + C + D$

ALGEBRA 2 TEAM QUESTION #5 FEBRUARY, 1999

If $a + b + c = 45$ and $ab + bc + ac = 13$ what is the value

of $a^2 + b^2 + c^2$?

ALGEBRA 2 TEAM QUESTION #6 FEBRUARY, 1999

Determine the equation of the line which contains the point $(-2, 1)$ and is perpendicular to the line which contains the points $(5, -3)$ and $(3, 6)$.

Write your answer in the form $ax + by = c$ where a , b , and c are integers.

ALGEBRA 2 TEAM QUESTION #7 FEBRUARY, 1999

Solve for n : $\sqrt{n + 40i} + \sqrt{n - 40i} = 10$ [Note: $i = \sqrt{-1}$]

ALGEBRA 2 TEAM QUESTION #8 FEBRUARY, 1999

How many positive integers, N , have the characteristic that $N!$ ends with exactly seven zeros?