

S.M.ART School Homework for MCB4 due 06-14-2024

Q1

In a certain sequence the difference between any two consecutive terms is 5. If the 20th term is 63, what is the 2nd term?

- (A) -32
- (B) -27
- (C) -22
- (D) 32
- (E) 37

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Q2

If 80% of the adult population of a village are registered to vote, and 60% of those registered actually voted in a particular election, what percent of the adults in the village did NOT vote in that election?

Q3

What positive number n satisfies the equation

$$(16)(16)(16)n = \frac{(64)(64)}{n} ?$$

- (A) $\frac{1}{4}$
- (B) 1
- (C) 4
- (D) 8
- (E) 16

Q4

Two white cards each measuring 3" x 5" are placed on a 9" x 12" piece of red construction paper so that they do not overlap. What is the area, in square inches, of the uncovered part of the red paper?

Q5 How many Integers satisfy the inequality $7*x > x^2$

Prove identity

T1 $1 / (\sin(x) * \cos(x)) - \cos(x) / \sin(x) = \tan(x)$

T2 $\sec^4(x) - \tan^4(x) = 1 + 2*\tan^2(x)$

T3 Find the greatest possible value of the expression
 $3*\cos^2(\alpha) + 4*\sin^2(\alpha)$

T4 Find the greatest possible value of the expression

$$3 \cos^2 \alpha - 4 \sin^2 \alpha.$$

T5 if $\cos(a) = 1/5$ and $\pi < a < 2\pi$,
then how much is $\sin(2a)$?

T6 if $\cos(70^\circ) = W$
then how much is $\sin(35^\circ)$?

I1 Solve inequality a system of inequalities
 $|x + 5| < 7$ AND $|3x + 4| > 2$

I2 Solve a system of inequalities
 $|x + 5| < 2$ AND $|3x + 4| > 7$