

HOW TO ENTER ANSWERS

Here are three simple example problems that demonstrate how to represent answers to questions in the Purple Comet! Math Meet.

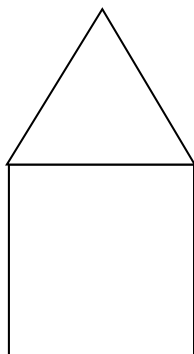
PROBLEM 1 Find the sum of the four smallest odd prime numbers.

ANSWER The four smallest odd prime numbers are 3, 5, 7, and 11, so their sum is $3 + 5 + 7 + 11 = 26$. Enter the number **26** as the answer.

PROBLEM 2 If a fair coin is flipped two times, the probability that one flip will be HEADS and the other will be TAILS is $\frac{m}{n}$ where m and n are relatively prime positive integers. Find $m + n$.

ANSWER Using H to represent a flip of HEADS, and T to represent a flip of TAILS, there are four equally likely ways to flip a fair coin twice: HH, HT, TH, and TT. In two of these four cases, one flip is H and one flip is T. The correct probability is $\frac{2}{4}$. But 2 and 4 are not relatively prime; that is, the fraction $\frac{2}{4}$ is not in lowest terms. Reducing the fraction to lowest terms gives $\frac{1}{2}$. Now 1 and 2 are relatively prime positive integers. The requested sum is $1 + 2 = 3$. Enter the number **3** as the answer.

PROBLEM 3 The diagram below shows a square with area 3 with an equilateral triangle with the same side length as the square mounted on top. The total height of this figure can be put in the form $\frac{m+\sqrt{n}}{p}$ where m and p are relatively prime positive integers. Find $m + n + p$.



ANSWER For the square to have area 3, it must have side length $\sqrt{3}$. Since an equilateral triangle with side length s has height $\frac{s\sqrt{3}}{2}$, the this equilateral triangle has height $\frac{\sqrt{3}\sqrt{3}}{2} = \frac{3}{2}$. Thus, the total height of the figure is $\sqrt{3} + \frac{3}{2} = \frac{2\sqrt{3} + 3}{2} = \frac{3+\sqrt{12}}{2}$. Since $m = 3$ and $p = 2$ are relatively prime positive integers, the requested sum is $3 + 12 + 2 = 17$. Enter the number **17** as the answer.