6. We want to prove that the only prime triple is 3, 5, 7.

Suppose there is another prime triple, say m, $m+2$, $m+4$ for some $m \in \mathbb{Z}$ and $m > 3$.

However, ~~fo~~ from question 5, we proved that for any integer n, at least one of n, $n+2$, $n+4$ is divisible by 3.

Hence, m, $m+2$, $m+4$ must have at least one member divisible by 3, ~~this contradicts~~ i.e. one of them can be expressed in the form of $3k$ when $k > 1$ (since $m > 3$). This contradicts the fact that m, $m+2$, $m+4$ are primes.

So the only prime triple is 3, 5, 7.