6. 3, 5, 7 is the only prime triple (three primes, each 2 from the next).

   Proof:

   Lemma: For any integer $n$, at least one of the integers $n$, $n+2$, $n+4$ is divisible by 3 (for proof see question 5).

   Assume there are 3 primes, each 2 from the next. So $n$, $n+2$, $n+4$ are all prime.
   But if $n > 3$, this means that as least one of $n$, $n+2$, $n+4$ is not prime (since at least one is divisible by 3). This is a contradiction.

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