7   It is given that any integer can be expressed in the form $3m + r$, where m is an integer and r is 0, 1 or 2.

Use this fact to answer the following.

(a) By considering the different values of r, prove that the square of any integer **cannot** be expressed in the form $3n + 2$, where n is an integer.   **[4]**

(b) Three integers are chosen at random from the integers 1 to 99 inclusive. The three integers are not necessarily different.

By considering the different values of r, determine the probability that the sum of these three integers is divisible by 3.   **[4]**