Geometric Distribution - Problems for Practice

Answer all the questions:

1. If the probability that a target is destroyed on any one shot is 0.5, what is the probability that it would be destroyed on 6^{th} attempt?

   Ans: $P(X = 0) = \frac{1}{64}$

2. If X is a geometric variate taking values 1,2, ... ∞, then find $P(X \text{ is odd})$.

   Ans: $P(X \text{ is odd}) = \frac{1}{1+q}$

3. A typist types 2 letters erroneously for every 100 letters. What is the probability that the tenth letter typed is the first erroneously typed letter?

   Ans: $P(X = 10) = 0.0167$

4. The probability of a student passing a subject is 0.8. What is the probability that he will pass the subject, (i). On his third attempt (ii). Before the third attempt?

   Ans: $P(X = 3) = 0.032$

   $P(X < 3) = 0.96$

5. If the probability that a target is destroyed on any one shot is 0.5. What is the probability that it would be destroyed on 6^{th} attempt?

   Ans: $P(X = 6) = \frac{1}{64}$