Question 1:

(a)   There are 120 students (boys and girls) in an Arabic class and 90 of them are girls. If one student is selected at random from this class
    (i)   Find the probability of selecting a girl.
    (ii)   Find the probability of selecting a boy.

(b)   If a well-balanced pair of dice (two dice) is rolled. Find the probability of
    (i)   Getting a sum 8
    (ii)   Getting a sum of more than 12

Question 2:

(a)   If $P(A) = 0.58$
          $P(B) = 0.66$
          $P(A \cap B) = 0.47$

    Find   (i) $P(A')$
             (ii) $P(A \cup B)$
             (iii) $P(A' \cap B)$
             (iv)   Are the events A and B independent? (Give reasons)

(b)   Check whether the given function can serve as the probability distribution of an appropriate random variable

$$f(x) = \frac{x+2}{12} \ \ for \ \ x = 1, 2, 3$$

Question 3:

(a)   Let x be number of cars that a randomly selected auto mechanic repairs on a given day. The following table lists probability distribution of x

x	$f(x)$
2	0.05
3	0.22
4	0.35
5	0.28
6	0.10

    Calculate :   (i)   The mean μ

                    (ii)   standard deviation σ

(b)   Use the standard normal table (given to you) to find the following probabilities
    (i) $P(z > 0.51)$
    (ii) $P(-0.34 < z < 2.21)$