Name:

QUIZ MATH GRADE 12 IB

1. (80%) Bag A contains 1 red ball, 2 blue balls and 5 green balls. Two balls are chosen at random from the bag without replacement. Let X denote the number of **blue** balls chosen. The following table shows the probability distribution for X

X	0	1	2
$P(X = x)$			

   a. (20%) **Draw a tree diagram** to represent the above information, including the probability of each event.

   b. (20%) Hence find the probability distribution for X, where X is the number of blue balls chosen, **fill the table**.

   c. (10%) Find E(X)

An 8 sided die with 8 faces, numbered 1 to 8, is rolled. If a 7 is obtained, two balls are chosen from bag A, otherwise **only** one ball is chosen from bag A.

   d. (15%) Find the probability to chose at least one blue ball.

   e. (15%) Given that one ball only was chosen, find the probability it was Green

2. (20%) The probability distribution of the discrete random variable X is given by:

$$P(X = x) = \frac{|Sin(90x)|}{k},$$ **Where x is a <u>Natural</u> number <u>smaller</u> than 8.**

a. (5%) Find the probability of 1

b. (5%) Find the probability of 2

c. (10%) Find the value of k.