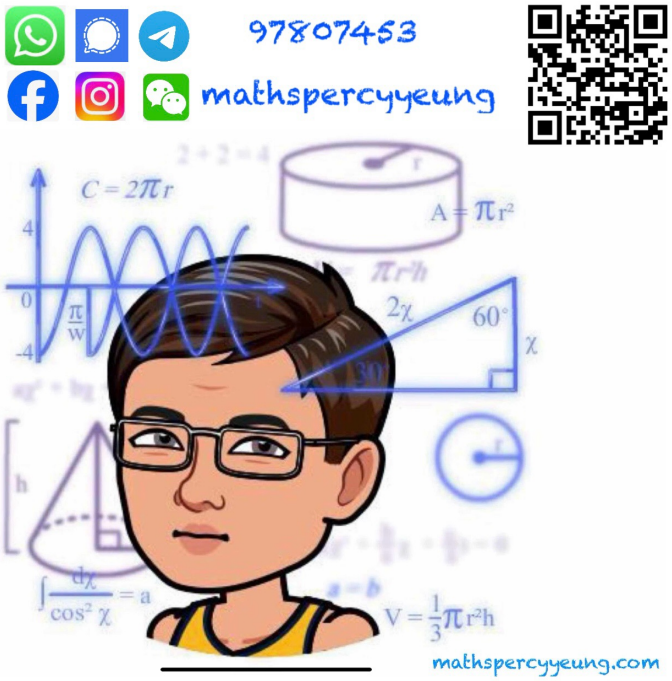
GHS Sorted Past Paper - MC
S5-06 More about Probability

1. [20 - 21 S6 Mock Exam - 29] (40%)

29. Two fair dice are thrown in a game. If the product of the two numbers thrown is a prime number, \$100 will be gained; otherwise, \$10 will be gained. Find the expected gain of the game.

A. \$ 17.5
B. \$ 25
C. \$ 27.5
D. \$ 37.5



2. [20 - 21 S6 Mock Exam - 43] (60%)

43. Susan and John are playing a game and they take turns to draw a card from eight cards numbered 1, 2, 3, 4, 5, 6, 7 and 8 with replacement. The first one who draws the card numbered 8 wins the game. Susan draws the cards first. Find the probability that Susan wins.

A. $\frac{8}{9}$
B. $\frac{8}{15}$
C. $\frac{7}{15}$
D. $\frac{1}{8}$

3. [21 - 22 S6 Mock Exam - 30] (62%)

30. Two numbers are randomly drawn at the same time from four cards numbered 2, 3, 5 and 7 respectively. If the sum of the numbers drawn is greater than 9, \$20 will be gained, otherwise \$5 will be gained. Find the expected gain of the game.

A. \$ $6\frac{2}{3}$
B. \$ 10
C. \$ 12.5
D. \$ 20

4. [21 - 22 S6 Mock Exam - 44] (66%)

44. A bag contains 2 red balls, 3 white balls and 4 black balls. Three balls are drawn from the bag at the same time. Find the probability that the balls drawn are of at least two different colours.

A. $\frac{5}{84}$
B. $\frac{2}{7}$
C. $\frac{5}{7}$
D. $\frac{79}{84}$

5. [21 - 22 S6 Standardized Test - 12] (70%)

12. A box contains seven cards with numbers –3, –2, –1, 0, 1, 2 and 3 respectively. Two cards are drawn randomly from the box at the same time. Find the probability that the product of the two numbers drawn is negative.

A. $\frac{1}{7}$
B. $\frac{3}{7}$
C. $\frac{4}{7}$
D. $\frac{5}{7}$

6. [21 - 22 S6 Standardized Test - 17] (70%)

17. There are three questions in a mathematics competition. The probabilities that John answers the first question correctly, the second question correctly and the third question correctly are 0.7, 0.4 and 0.2 respectively. The probability that John answers at least 1 question correctly in the competition is

A. 0.344.
B. 0.468.
C. 0.612.
D. 0.856.

7. [22 - 23 S6 Mock Exam - 30] (91%)

30. A bag contains 1 green ball, 3 yellow balls and 2 white balls. Two balls are randomly drawn at the same time from the bag. Find the probability that the two balls drawn are of the same colour.

A. $\frac{7}{30}$

B. $\frac{4}{15}$

C. $\frac{1}{2}$

D. $\frac{11}{15}$

8. [22 - 23 S6 Mock Exam - 44] (68%)

44. There are three questions in a Mathematics competition. The probabilities that Evangeline answers the first question correctly, the second question correctly and the third question correctly are $\frac{2}{3}$, $\frac{3}{4}$ and $\frac{4}{5}$ respectively. The probability that Evangeline answers at least 1 question correctly in the competition is

A. $\frac{1}{60}$.

B. $\frac{13}{30}$.

C. $\frac{47}{60}$.

D. $\frac{59}{60}$.

9. [22 - 23 S6 Standardized Test - 06]

6. Two numbers are randomly drawn at the same time from six cards numbered 2, 2, 3, 5, 7 and 9 respectively. Find the probability that the sum of the numbers drawn is an even number.

A. $\frac{1}{15}$

B. $\frac{2}{5}$

C. $\frac{7}{15}$

D. $\frac{3}{5}$

10. [22 - 23 S6 Standardized Test - 11]

11. A bag contains 2 black balls, 2 green balls and 2 yellow balls. Joan repeats drawing one ball at a time randomly from the bag without replacement until a green ball is drawn. Find the probability that she needs at most four draws.

A. $\frac{1}{15}$
B. $\frac{2}{15}$
C. $\frac{65}{81}$
D. $\frac{14}{15}$

11. [23 - 24 S6 Mock Exam - 43] (35%)

43. A box contains 1 red ball, 2 yellow balls and 3 green balls. A boy and a girl take turns to draw one ball randomly from the box with replacement until one of them draws a red ball or a yellow ball. The girl draws the ball first. Find the probability that the girl draws a red ball.

A. $\frac{2}{9}$
B. $\frac{4}{9}$
C. $\frac{2}{3}$
D. $\frac{7}{9}$

12. [23 - 24 S6 Standardized Test - 02] (62%)

2. Box *A* contains four cards numbered 3, 5, 7 and 9 respectively while box *B* contains five cards numbered 2, 4, 6, 8 and 10 respectively. If a number is randomly drawn from each box, find the probability that the sum of the two numbers drawn is a multiple of 3.

A. 0.25
B. 0.3
C. 0.45
D. 0.6

13. [24 - 25 S6 Mock Exam - 43] (81%)

43. There are three missions in a game. The probability that Peter completes the first mission, the second mission and the third mission are 0.4, 0.6 and 0.7 respectively. Find the probability that Peter completes at most two missions in this game.

A. 0.168

B. 0.324

C. 0.436

D. 0.832

GHS Sorted Past Paper - Conventional Questions
S5-06 More about Probability

1. [21 - 22 S6 Mock Exam - 15] (59%)

15. 4 boys and 4 girls are standing in a row to take a photo.

(a) Find the number of arrangements if no boys stand next to each other. **(2 marks)**

(b) Tom and Mary join these boys and girls to take another photo standing in a row. Find the probability that Tom and Mary are standing in the middle. **(2 marks)**

2. [20 - 21 S6 Mock Exam - 15]

15. There are 48 male and 32 female customers in a café.

(a) If 4 customers are selected to form a survey group consisting of at least 1 female customer, how many different survey groups can be formed? **(2 marks)**

(b) The following table shows the statistics of the sizes of drinks ordered by these 80 customers. Two customers are selected at random. Find the probability that the two selected customers have ordered drinks of the same size.

Size / Customer	Large	Medium	Small
Male	14	28	6
Female	2	12	18

(2 marks)

3. [21 - 22 S6 Standardized Test - 06] (67%)

6. In a box, there are 5 yellow balls, 6 red balls and 7 white balls. If 5 balls are randomly drawn from the box at the same time,

(a) find the probability that the 5 selected balls are of the same colour. **(2 marks)**

(b) find the probability that the 5 selected balls are of exactly 2 different colours – red and white. **(2 marks)**

4. [22 - 23 S6 Mock Exam - 15] (62%)

15. In a box, there are 3 green balls, 4 yellow balls and 7 blue balls. In one game, 5 balls are randomly drawn from the box at the same time.

(a) Find the probability that exactly 3 yellow balls are drawn. **(2 marks)**

(b) If the number of yellow balls is greater than that of the other coloured balls, 30 tokens will be obtained, otherwise 10 tokens will be obtained. Find the expected number of tokens obtained in one game. **(3 marks)**

5. [22 - 23 S6 Standardized Test - 03]

3. There are 10 boys and 8 girls in class 6G. The teacher randomly picks five students to form a committee.

(a) Find the probability that there is at least one boy in the committee. **(2 marks)**

(b) Find the probability that there are more girls than boys in the committee. **(2 marks)**

6. [23 - 24 S6 Mock Exam - 15] (75%)

15. A queue is randomly formed by 5 boys and 3 girls.

(a) How many different queues can be formed? **(1 mark)**

(b) Find the probability that all boys are next to each other in the queue. **(3 marks)**

7. [23 - 24 S6 Standardized Test - 05] (48%)

5. There are 6 men and 3 women in a party. If they are randomly arranged to stand in a row and take a photo, find the probability that

(a) all the men are next to each other, **(2 marks)**

(b) no women are next to each other. **(2 marks)**

8. [24 - 25 S6 Mock Exam - 15] (64%)

15. A queue is randomly formed by 5 girls and 4 boys. Find the probability that

(a) all boys are queuing together in the queue; **(2 marks)**

(b) no boys are next to each other in the queue. **(2 marks)**