聖公會林護紀念中學

2021-22 中一學位申請 第一階段面試 (數學解難) A (總分：9 分)

考慮方程式 $\frac{1}{A}+\frac{1}{B}=\frac{1}{6}$, 其中 A 和 B 是正整數。

1. (a) 若 A 和 B 相等, 求 A 的值 (1 分)

   (b) 若 $A=7$, 求 B 的值 (1 分)

2. (a) 除了第 1 題 (a) 和 (b) 的兩組答案外，小芬還找到另外三組 A 和 B 的可能答案，並且 A 小於 B。請問這三組答案是甚麼？ (3 分)

   (b) 小芬說，若只考慮 A 等於 B 或 A 小於 B 的情形，除了上述題目的五組答案以外，不可能會再找到第六組答案了。你同意嗎？請解釋原因。 (2 分)

3. 設 $\frac{1}{\mathrm{P}}+\frac{1}{\mathrm{Q}}+\frac{1}{\mathrm{R}}=\frac{1}{6}$, 其中 P, Q 和 R 都是正整數。

   (a) 問 P 的最小可能值是多少？ (1 分)

   (b) 問 R 的最大可能值是多少？ (1 分)

(應考同學在面試作答時，不需重複讀問題。
另外，面試老師可能對你的解答作出追問)。

S.K.H. Lam Woo Memorial Secondary School

2020-2021 F.1 Admission Application

First Round Interview (Problem Solving in Mathematics) Set A (Total mark: 9)

Consider the equation $\frac{1}{A}+\frac{1}{B}=\frac{1}{6}$, where A and B are positive integers.

1. (a) If A equals B, find A. (1 mark)

   (b) If $A=7$, find B. (1 mark)

2. (a) Apart from the two groups of answers in question 1(a) and 1(b), Jane found 3 other groups of possible answers of A and B, where A is less than B. What are these 3 groups of answers? (3 marks)

   (b) Jane claimed that, if we only consider the situations where A is equal to B or A is less than B, apart from the 5 groups of answers in the previous question, it is impossible to find the 6^{th} group of answers. Do you agree? Explain your reasoning. (2 marks)

3. Let $\frac{1}{\mathrm{P}}+\frac{1}{\mathrm{Q}}+\frac{1}{\mathrm{R}}=\frac{1}{6}$, where P, Q and R are all positive integers.

   (a) What is the minimum possible value of P? (1 mark)

   (b) What is the maximum possible value of R? (1 mark)

(In the interview, candidates need not repeat the questions to the interviewers).
(The interviewers may ask you further question to elaborate your answer).