

北一女中 103 學年度《數戰數法》有獎徵答活動

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題號：1-1 頁碼/總頁數：_____ (如果只有一頁，可不填)

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$$\frac{1}{x} + \frac{1}{y+z} = \frac{1}{3} \Rightarrow \frac{x+y+z}{x(y+z)} = \frac{1}{3}$$

$$\frac{1}{y} + \frac{1}{z+x} = \frac{1}{4} \Rightarrow \frac{x+y+z}{y(z+x)} = \frac{1}{4}$$

$$\frac{1}{z} + \frac{1}{x+y} = \frac{1}{5} \Rightarrow \frac{x+y+z}{z(x+y)} = \frac{1}{5}$$

$$\therefore (xy+xz):(yz+xy):(zx+yx) = 3:4:5$$

$$\therefore xy:xz:yz = 1:2:3$$

$$\div xyz \Rightarrow \frac{1}{z} = \frac{1}{y} = \frac{1}{x} = 1:2:3$$

$$\therefore x:y:z = 2:3:6$$

設 $x=2k, y=3k, z=6k$ 代入原式

$$\frac{1}{3} = \frac{11k}{2k \times 9k}, k = \frac{11}{6}$$

$$\therefore \begin{cases} x = \frac{11}{3} \\ y = \frac{11}{2} \\ z = 11 \end{cases}$$

$$y = \frac{11}{2}$$

$$z = 11$$

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