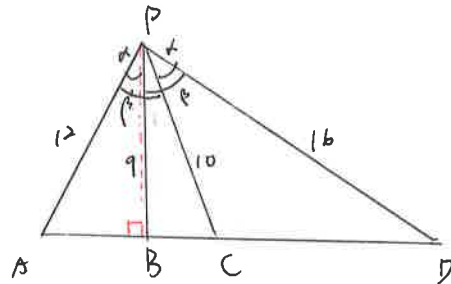


北一女中 103 學年度《數戰數決》有獎徵答活動

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題號：5-5 頁碼/總頁數：5/6 (如果只有一頁，可不填)



$$\angle APB = \angle CPD = \alpha$$

$$\angle APC = \angle BPD = \beta$$

設 $\triangle APD$ 在 \overline{AD} 上的高 = h

$$\triangle APB = \frac{1}{2} \overline{AB} \times h = \frac{1}{2} \times 12 \times 9 \times \sin \alpha \quad - \textcircled{1}$$

$$\triangle CPD = \frac{1}{2} \overline{CD} \times h = \frac{1}{2} \times 10 \times 16 \times \sin \alpha \quad - \textcircled{2}$$

$$\triangle APC = \frac{1}{2} \overline{AC} \times h = \frac{1}{2} \times 12 \times 10 \times \sin \beta \quad - \textcircled{3}$$

$$\triangle BPD = \frac{1}{2} \overline{BD} \times h = \frac{1}{2} \times 9 \times 16 \times \sin \beta \quad - \textcircled{4}$$

$$\frac{\textcircled{1}}{\textcircled{2}} \frac{\overline{AB}}{\overline{CD}} = \frac{108}{160} = \frac{27}{40}, \quad \frac{\textcircled{3}}{\textcircled{4}} \frac{\overline{AC}}{\overline{BD}} = \frac{120}{144} = \frac{5}{6}$$

不妨令 $\overline{AC} = 5t, \overline{BD} = 6t$

$\overline{AB} = 27, \overline{CD} = 40$

$$\overline{AD} = 5t + 40 = 6t + 27$$

$$t = 13$$

$$\overline{AB} : \overline{BC} : \overline{CD} = 27 : 38 : 40$$