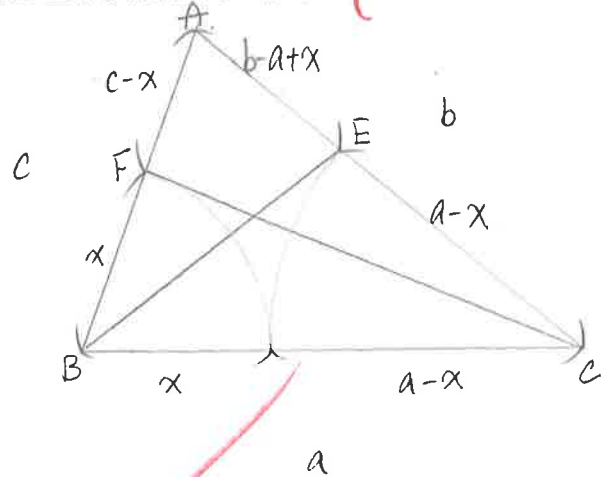


# 北一女中 107 學年度《數戰數決》有獎徵答活動

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題號：6-3 頁碼/總頁數： (如果一題只有一頁，可不填)  
 (請不要將兩題的解答寫在同一張答案紙，一題的解答也不要寫在同一張答案紙的正反面。)

設  $\overline{AB} = c$   
 $\overline{AC} = b$   
 $\overline{BC} = a$   
 $\overline{BF} = x$



$$\frac{c}{a} = \frac{b-x}{a-x}$$

$$ab - a^2 + ax = ca - cx$$

$$ax + cx = a^2 - ab + ac$$

$$x = \frac{a(a-b+c)}{a+c} \dots\dots ①$$

$$\frac{b}{a} = \frac{c-x}{x}$$

$$ac - ax = bx$$

$$ac = (b+a)x$$

$$x = \frac{ac}{a+b} \dots\dots ②$$

$$① \quad x = \frac{a(a-b+c)}{a+c} = \frac{ac}{a+b}$$

$$\frac{a-b+c}{a+c} = \frac{c}{a+b}$$

$$c^2 + ac = (a+b)(a+c-b) = a^2 + ac + bc - b^2$$

$$c^2 = a^2 - b^2 + bc$$

$$b^2 + c^2 - a^2 = bc \dots\dots ③$$

代入③

$$\cos A = \frac{b^2 + c^2 - a^2}{2bc} = \frac{bc}{2bc} = \frac{1}{2}$$

$$\angle A = 60^\circ$$