

From 1

$$c=13, a=17, \angle B=30^\circ$$

Apply cosine formula.

$$b^2 = a^2 + c^2 - 2ac \cos B$$

$$b^2 = 169 + 289 - 2 \times 13 \times 17 \times \cos 30^\circ$$

$$b^2 = 458 - 221\sqrt{3}$$

$$b^2 = 75.228 \text{ --- } \textcircled{1} \quad b \approx 8$$

using 1, we can find the ~~for~~ triangle is acute or not by using the condition ~~that~~ $b^2 + c^2 > a^2$

$\therefore$ Statement 1 is Sufficient.

From statement 2,

if a^2 , b^2 and c^2 is right angled triangle.

then, we have $a^4 + b^4 = c^4$ (Assume c is longer side). — (2)

For Δ^{le} with sides a , b and c , it should satisfy the below condition for acute triangle.

$$a^2 + b^2 > c^2 \text{ — (3)}$$

Square on both sides. ~~$a^4 + b^4 > c^4$~~ $(a^2 + b^2)^2 > c^4$ — (4)

From eqn (2).

We can write as, $(a^2 + b^2)^2 - 2a^2b^2 = c^4$

$$(a^2 + b^2)^2 = c^4 + 2a^2b^2 \text{ — (5)}$$

From eqn (4) and (5)

We can see that

$$c^4 + 2a^2b^2 > c^4$$

$\therefore \Delta^{le}$ is acute.

$\therefore$ Statement 2 is sufficient.