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Solutions by Dev Anoop

① i) let $a = b = c = 1 \text{ cm}$

$$\begin{array}{l|l|l} a+b = 1+1 & b+c = 1+1 & a+c = 1+1 \\ = 2 & = 2 & = 2 \\ \hline \therefore a+b > c & b+c > a & a+c > b \end{array}$$

\therefore it is possible to draw a Δ with given sides

① ii) let $a = 2 \text{ cm}$, $b = 3 \text{ cm}$, $c = 4 \text{ cm}$

$$\begin{array}{l|l|l} a+b = 2+3 & b+c = 3+4 & a+c = 2+4 \\ = 5 & = 7 & = 6 \\ \hline \therefore a+b > c & b+c > a & a+c > b \end{array}$$

\therefore it is possible to draw a Δ with given sides.

① iii) let $a = 7 \text{ cm}$, $b = 8 \text{ cm}$, $c = 15 \text{ cm}$

$$\begin{array}{l} a+b = 7+8 \\ = 15 \end{array}$$

$\therefore a+b \not> c$, it is not possible to draw a Δ with given sides.

① iv) let $a = 3.4 \text{ cm}$, $b = 2.1$, $c = 5.3 \text{ cm}$

$$\begin{array}{l|l|l} a+b = 3.4+2.1 & b+c = 2.1+5.3 & a+c = 3.4+5.3 \\ = 5.5 \text{ cm} & = 7.4 & = 8.7 \end{array}$$

$\therefore a+b > c$ $\therefore b+c > a$ $\therefore a+c > b$
 Δ can be drawn with given sides.

① v) $a = 6 \text{ cm}$, $b = 7 \text{ cm}$, $c = 14 \text{ cm}$

$$\begin{array}{l} a+b = 6+7 \\ = 13 \end{array}$$

$\therefore a+b \not> c$ $\therefore \Delta$ cannot be drawn with given sides