

$$\angle ABC = 52^{\circ}50' (52.83^{\circ})$$

Since  $\angle ABC$  is an obtuse angle, it implies that

$$\begin{aligned}\angle ABC &= 180^{\circ} - 52^{\circ}50' (52.83^{\circ}) \\ &= 127^{\circ}10' (127.17^{\circ})\end{aligned}$$

### 6.1.3 PAPER 2 (121/2)

In this paper, the questions to be considered for analysis are 4, 6, 11, 12, 14, 19 and 20.

#### Question 4

Two trains  $T_1$  and  $T_2$  travelling in opposite directions, on parallel tracks, are just beginning to pass one another. Train  $T_1$  is 72 m long and is travelling at 108 km/h.  $T_2$  is 78 m long and is travelling at 72 km/h.

Find the time, in seconds, the two trains take to completely pass one another. (4 marks)

In this question candidates were required to find the time the two trains took to pass one another given their lengths and speeds.

#### Weaknesses

Candidates were unable to realize that they were to resolve the two speeds in order to get relative speed. Many ignored the fact that the units were incompatible.

#### Expected Responses

Candidates needed to find the total distance covered for the trains to completely pass each other.

$$\text{Distances to be covered} = 72 + 78 = 150\text{m} = 0.15 \text{ km}$$

Resolving the two speeds to get the relative speed will yield  $108 + 72 = 180 \text{ km/h}$

Hence, time taken for the trains to completely pass each other will be equal to:

$$\frac{0.15 \times 60 \times 30}{180} = 3 \text{ seconds}$$