1.

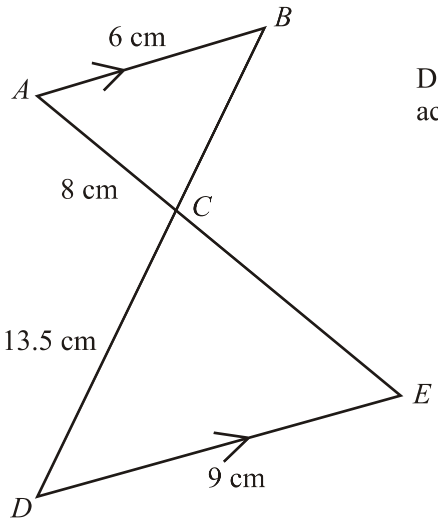


Diagram **NOT** accurately drawn

AB is parallel to *DE*.
ACE and *BCD* are straight lines.
AB = 6 cm,
AC = 8 cm,
CD = 13.5 cm,
DE = 9 cm.

(i) Work out the length of *CE*.

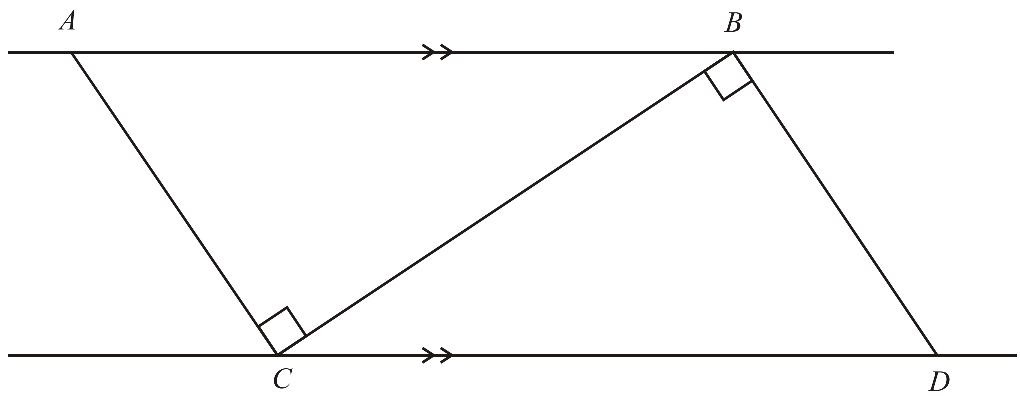
.... cm

(ii) Work out the length of *BC*.

.....................................cm

(Total 3 marks)

2.



AB is parallel to CD.
Angle ACB = angle CBD = 90°.

Prove that triangle ABC is congruent to triangle DCB.

(Total 3 marks)

1. $\frac{CE}{8} = \frac{9}{6} or \frac{CE}{9} = \frac{8}{6} \Rightarrow CE = \frac{8 \times 9}{6}$

$\frac{BC}{13.5} = \frac{6}{9} or \frac{BC}{6} = \frac{13.5}{9} \Rightarrow BC = \frac{13.5 \times 6}{9}$

(i) 12 3

(ii) 9

M1 for scale factor $\frac{9}{6}\left(or \frac{6}{9}\right) or \frac{8}{6}\left(or \frac{6}{8}\right) or \frac{13.5}{9}\left(or \frac{9}{13.5}\right)$ *oe*

A1 cao for 12
A1 cao for 9

[3]

2. $\angle ABC = \angle BCD$ (alternate angles)
BC common
$\angle ACB = \angle CBD = 90°$ (given) 3

M1 for $\angle ABC = \angle BCD$ *(alternate angles)*
M1 for BC common oe
A1 for both < ACB = < CBD (given or both 90°)and ASA

[3]

1. Intermediate Tier

This question was answered poorly. Candidates either have very little understanding of similar triangles or fail to recognize them when they appear. Many gave the two lengths as 13.5 cm and 8 cm (assuming the triangles to be isosceles) and some attempted to use Pythagoras' theorem. About 10% of candidates got at least one length correct but few wrote down a scale factor.

Higher Tier

Many candidates did well on this question. Most were able to match the triangles to derive the appropriate ratios. Generally candidates who could do (i) could also do (ii). There were a relatively small number of candidates who attempted to use Pythagoras' theorem or the cosine rule for the lengths.

2. This question was poorly answered. A number of candidates clearly understood the conditions for congruence but were unable to give a rigorous proof. A very wide spread misapprehension was to assume that a condition of congruence was AAA. It was also very common to read phrases such as 'since *AB* is parallel to *CD*, *AB = CD*' in candidates' solutions.