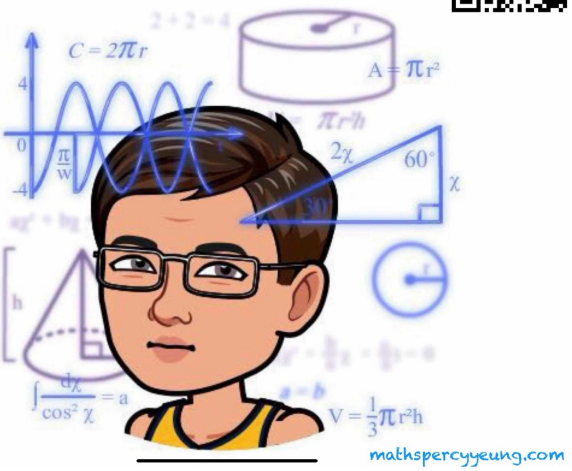


S1

Mathematics

Past Exam Paper (1314–2223)

Question Book

Ch11 Congruent Triangle

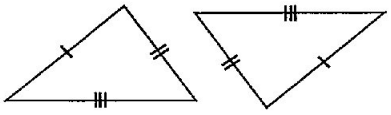
UCCKE F1 Ch11 Congruent Triangle

Ch11 Congruent Triangle

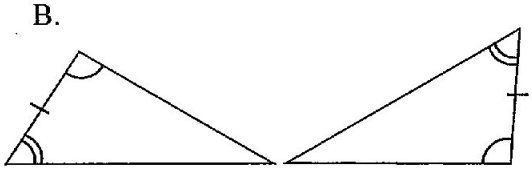
[1314 S.1 3rd Exam MC Q7]

1. Which of the following pairs of triangles are **not** congruent to each other?

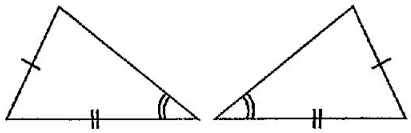
A.



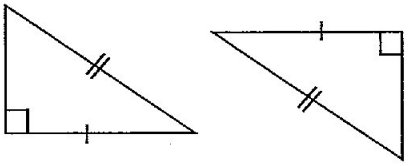
B.



C.



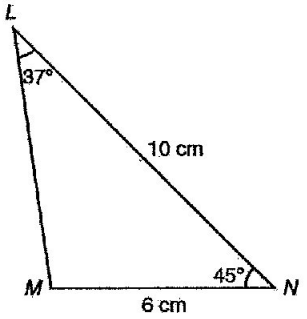
D.

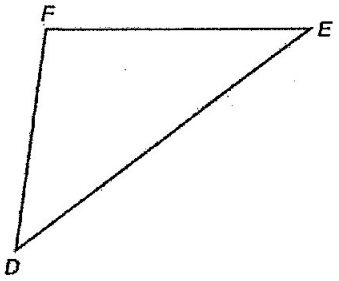


[1314 S.1 3rd Exam SQ Q2]

2. In the figure below, it is known that $\triangle LMN \cong \triangle EFD$. If $LN = 10$ cm, $MN = 6$ cm, $\angle N = 45°$, write down the following lengths of sides and sizes of angles.

(2 marks)





(a) $ED =$ ( )

(b) $FD =$ ( )

(c) $\angle D =$ ( )

(d) $\angle F =$ ( )

[1415 S.1 3rd Exam MC Q5]

3. In figure 3, what is the reason for $\Delta ABC \cong \Delta DCB$?

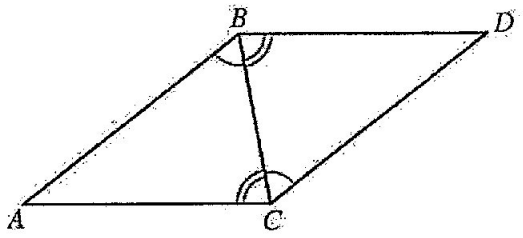


Figure 3

A. AAA
B. AAS
C. ASA
D. SSS

[1415 S.1 3rd Exam SQ Q8]

4. Figure 12 shows three triangles. Which two are congruent? Give reason.

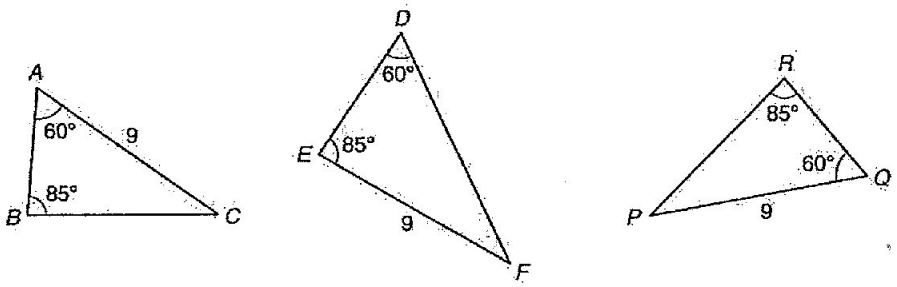


Figure 12

(2 marks)

[1415 S.1 3rd Exam Enhanced Question Q2]

5. In figure 16, $RS = RQ$, $\angle PSR = \angle PQR = 90°$.
   (a) Name a pair of congruent triangles and give reason. (2 marks)
   (b) If $\angle SRP = 65°$, find $\angle SPQ$. (2 marks)

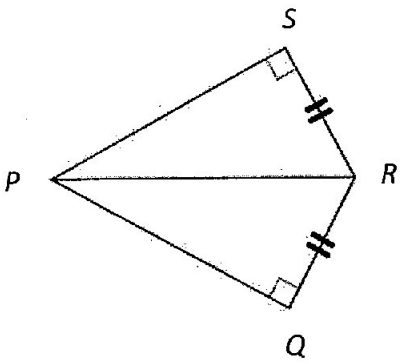


Figure 16

[1516 S.1 3rd Exam MC Q2]

6. In Figure 1, the reason for $\Delta ABC \cong \Delta DEF$ is

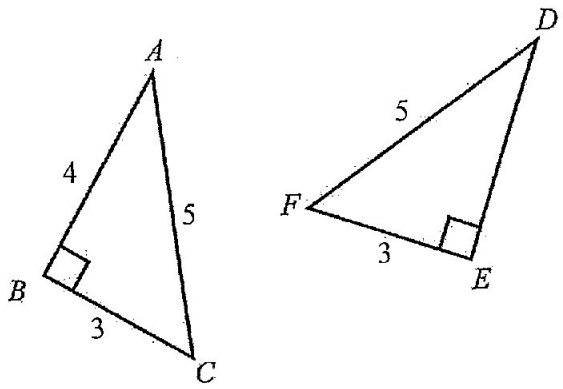


Figure 1

A. ASA.
B. RHS.
C. SAS.
D. SSS.

[1516 S.1 3rd Exam SQ Q2]

7. In Figure 5, name the pair of congruent triangles and give reason.

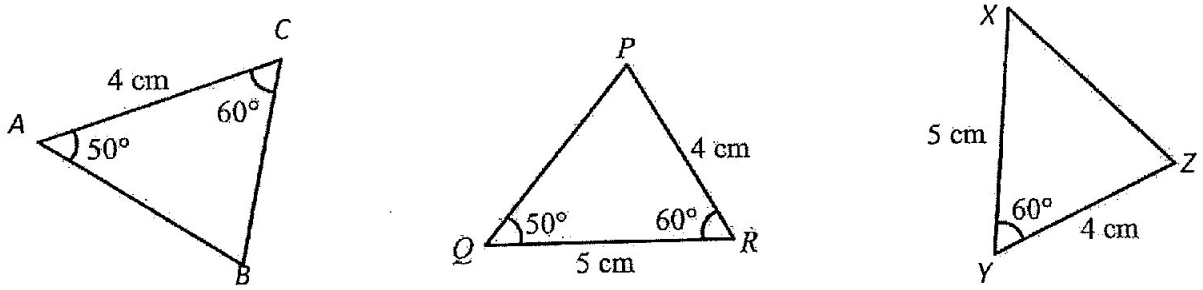


Figure 5

(3 marks)

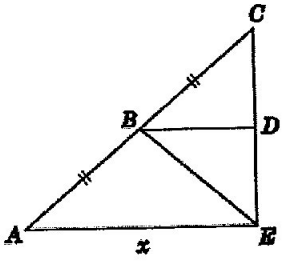
Δ _____ $\cong$ Δ _____

Reason: (_____)

[1617 S.1 3rd Exam MC Q3]

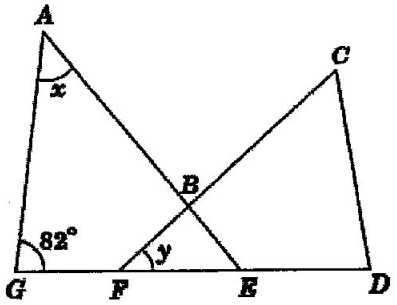
8. In the figure, ABC and CDE are straight lines. $\Delta BCD \cong \Delta BED$ and $AB = BC$. If $BD = 6$, find x.

A. 3
B. 6
C. 12
D. 18



[1617 S.1 3rd Exam MC Q10]

9. In the figure, *ABE*, *FBC* and *GFED* are straight lines. $\triangle AEG \cong \triangle FCD$. Which of the following may not be correct?



A. $x = y$

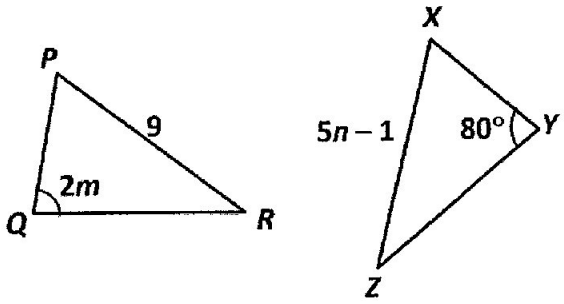
B. $\angle CDF = 82°$

C. $GF = ED$

D. $AE = FC$

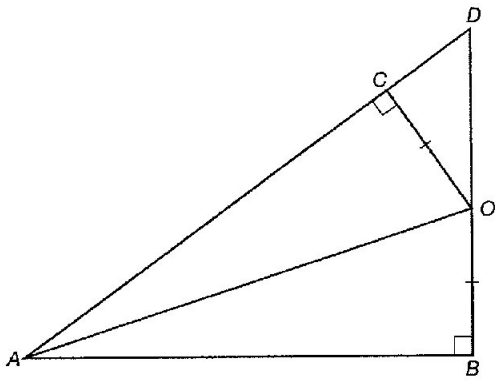
[1617 S.1 3rd Exam SQ Q15]

10. In the figure, $\Delta PQR \cong \Delta XYZ$. Find m and n. (3 marks)



[1617 S.1 3rd Exam SQ Q20]

11. In the figure, ACD and BOD are straight lines. $OC = OB$, $AB \perp BD$ and $AD \perp OC$.



(a) Write down a pair of congruent triangles and give the reason. (1 mark)

(b) It is given that $\angle OAB = x$. Find, in terms of x,

(i) $\angle AOB$, and (2 marks)

(ii) $\angle COD$. (3 marks)

(c) If $\angle AOD = 110°$, find $\angle BAD$. (3 marks)

[1718 S.1 3rd Exam MC Q7]

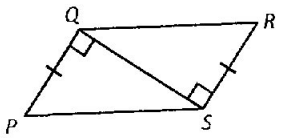
12. The figure shows a pair of triangles. Which of the following must be correct?

A. $\triangle PQS \cong \triangle SQR$ (*AAS*)

B. $\triangle SPQ \cong \triangle RQS$ (*ASA*)

C. $\triangle QPS \cong \triangle RSQ$ (*RHS*)

D. $\triangle QSP \cong \triangle SQR$ (*SAS*)



[1718 S.1 3rd Exam FQ Q16]

13. It is given that $\triangle ABC \cong \triangle DEF$. $AB = 6$, $BC = 9$, $\angle B = 48°$ and $\angle C = 62°$. Find EF and $\angle D$. (3 marks)

[1819 S.1 3rd Exam MC Q7]

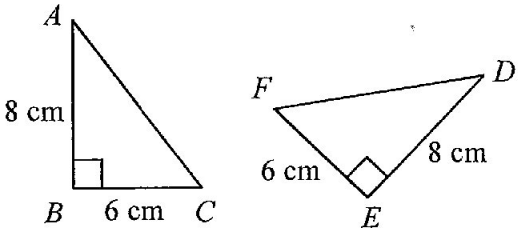
14. In the figure, ABC and DEF are two triangles with $\angle ABC = \angle DEF = 90°$, $AB = DE = 8$ cm and $BC = EF = 6$ cm. Without finding any length or angle, which of the following is the reason for $\triangle ABC \cong \triangle DEF$?

A. SAS

B. RHS

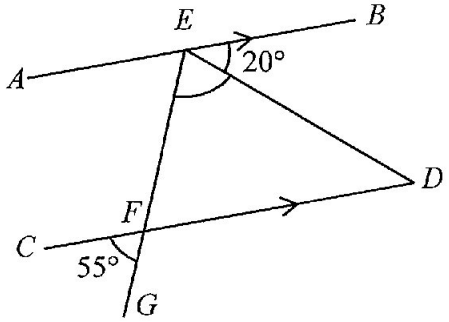
C. ASA

D. SSS



[1819 S.1 3rd Exam BQ Q18]

15. In the figure, AB // CD. E and F are points lying on AB and CD respectively. EF is produced to a point G. It is given that $\angle BED = 20°$ and $\angle CFG = 55°$. Find $\angle DEF$ with appropriate reasons by filling in the following blanks. (3 marks)



$\angle EFD = \angle CFG$ (_____)

$\angle EFD = 55°$

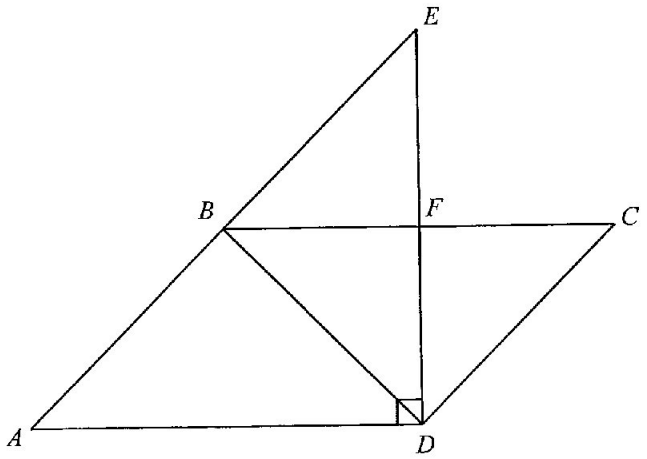
$\angle BEF + \angle EFD = 180°$ (_____)

$20° + \angle DEF + 55° = 180°$

$\angle DEF =$ _____

[1819 S.1 3rd Exam AQ Q26]

16. In the figure, $ABCD$ is a parallelogram with $AB = CD$ and $AD = BC$. AB is produced to the point E such that $DE \perp AD$. DE and BC meet at the point F. It is given that B is the mid-point of AE.



(a) Which triangle is congruent to ΔBEF ? Show your reasons by filling in the following blanks. (2 marks)

$\because$ $\angle BFE = \angle CFD$ (_____)

$\angle BEF = \angle CDF$ (_____)

$BE = AB$ (given)

$AB = CD$ (given)

$BE = CD$

$\therefore$ $\Delta BEF \cong \Delta$ _____ (_____)

(b) Furthermore, $CD = 5$ cm, $DF = 4$ cm and $CF = 3$ cm. Let N be the point lying on AE such that $DN \perp AE$. Find the length of DN. (2 marks)

[1920 S.1 Final Exam BQ Q8]

17. Figure 3, name a pair of congruent triangles and give the reason. (2 marks)

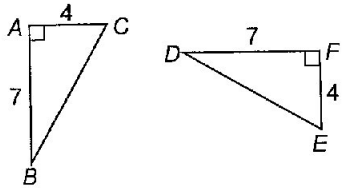
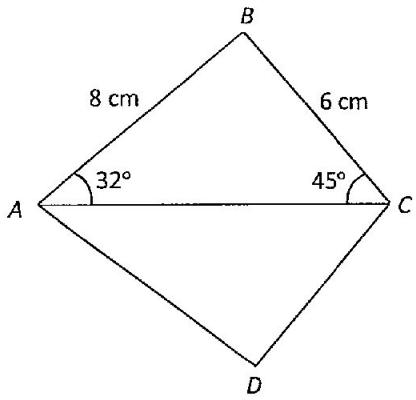


Figure 3

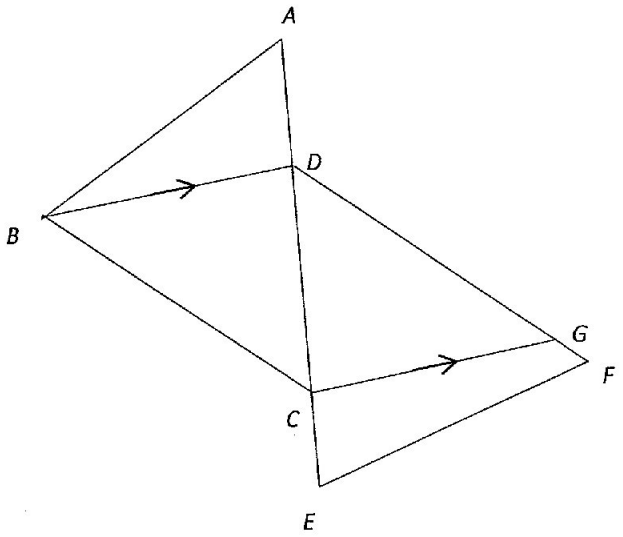
[2021 S.1 Final Exam BQ Q8]

18. In the figure, $\Delta ABC \cong \Delta ADC$. If $\angle BAC = 32°$, $\angle BCA = 45°$, $AB = 8$ cm and $BC = 6$ cm, write down the length of AD and $\angle DCA$. (2 marks)



[2021 S.1 Final Exam IQ Q14]

19. In the figure, $\Delta ABC \cong \Delta FED$ and $ADCE$ is a straight line. G is a point on DF such that $BD \parallel CG$.



(a) Prove that $\Delta BDC \cong \Delta GCD$.

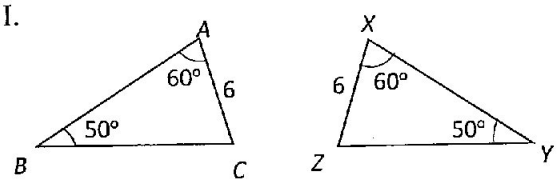
(b) If $BC = 8$ cm, $AC = 10$ cm and $AB = 7$ cm, find GF.

(4 marks)

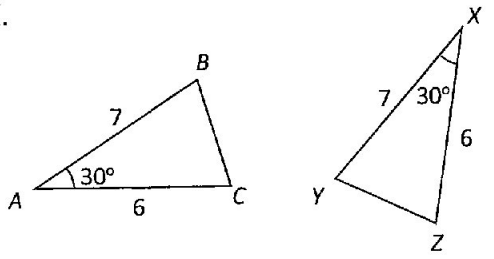
[2021 S.1 Final Exam MC Q17]

20. With reference to the following pairs of triangles, which of the following show(s) that $\Delta ABC \cong \Delta XYZ$?

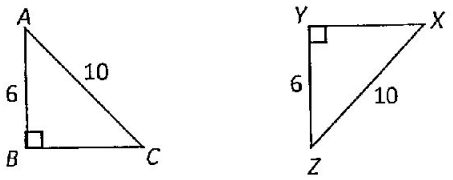
I.



II.



III.



A. I and II only

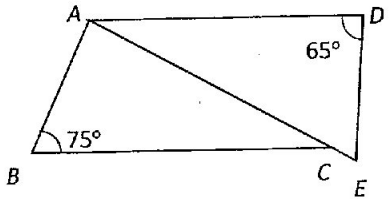
B. I and III only

C. II and III only

D. I, II and III

[2021 S.1 Final Exam MC Q18]

21. In the figure, $\Delta ABC \cong \Delta DEA$ and ACE is a straight line. $\angle ABC = 75°$ and $\angle EDA = 65°$, then $\angle BAD =$



A. 65°.

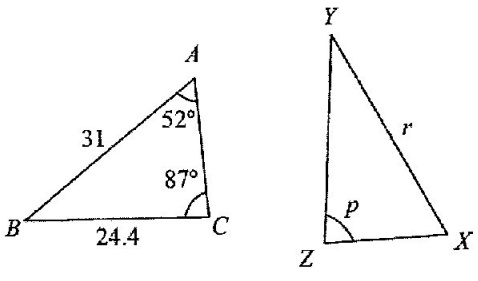
B. 105°.

C. 115°.

D. 140°.

[2122 S.1 Final Exam BQ Q9]

22. In the figure, $\Delta ABC \cong \Delta XYZ$. Find the unknowns. (2 marks)

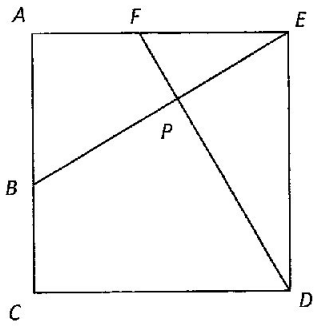


[2122 S.1 Final Exam AQ Q17]

23. In the figure, $ACDE$ is a square. It is given that $\angle AFD = 123°$ such that $EF = AB$.

(a) Prove that $\Delta ABE \cong \Delta EFD$. (2 marks)

(b) Find $\angle ABE$ and hence prove that $FD \perp BE$. (3 marks)



[2122 S.1 Final Exam MC Q15]

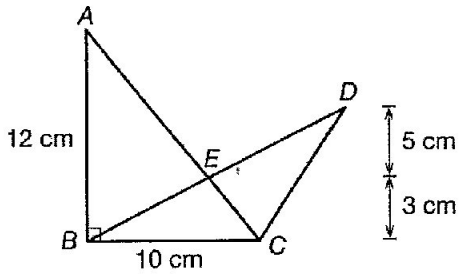
24. In the figure, find the area of $ABCDE$.

A. $40\,cm^2$

B. $60\,cm^2$

C. $85\,cm^2$

D. $100\,cm^2$



[2122 S.1 Final Exam MC Q18]

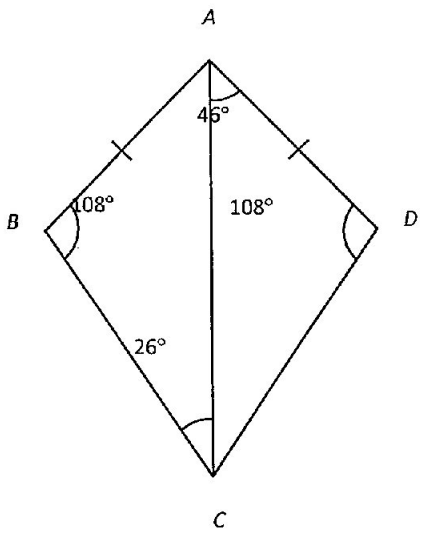
25. In the figure, which of the following CANNOT be a reason for the congruence of $\triangle ABC$ and $\triangle ADC$?

A. SAS

B. ASA

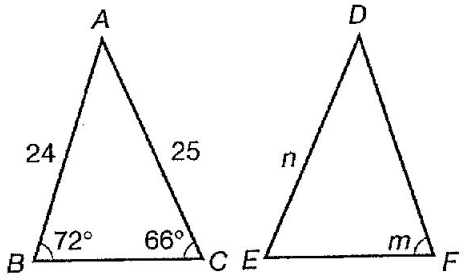
C. AAS

D. RHS



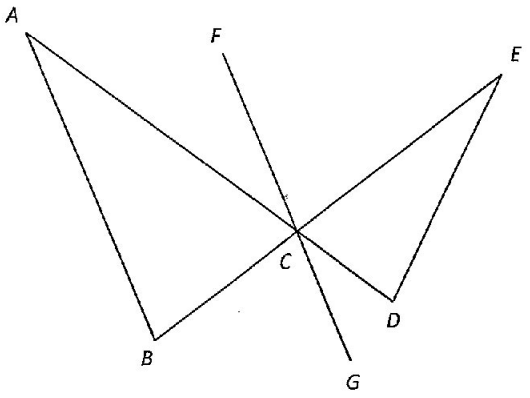
[2223 S.1 Final Exam BQ Q7]

26. In the figure, $\triangle ABC \cong \triangle DFE$. Find m and n. (3 marks)



[2223 S.1 Final Exam IQ Q10]

27. In the figure, AD and BE intersect at point C. FCG is a straight line. It is given that $\angle CED = 22°$, $\angle CDE = 74°$, $\angle BAC = 34°$ and $\angle BCG = 62°$. Prove that $AB \parallel FG$. (3 marks)

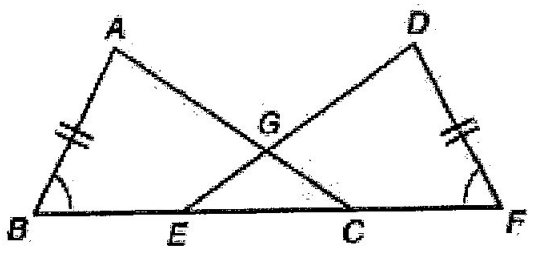


[2223 S.1 Final Exam IQ Q12]

28. In the figure, $BECF$ is a straight line. $BE = CF$, $AB = DF$ and $\angle ABC = \angle DFE$.

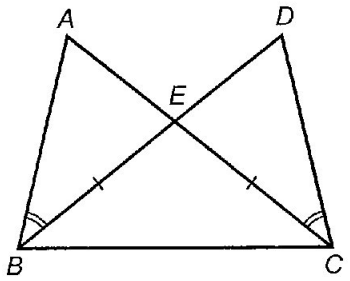
(a) Write down a pair of congruent triangles and give reason. (1 mark)

(b) If $\angle ACB = 35°$, find $\angle EGC$. (2 marks)



[2223 S.1 Final Exam MC Q9]

29. In the figure, *AEC* and *BED* are straight lines. Which of the following must be true?



A. $\triangle ABE$ and $\triangle DCE$ are not congruent.

B. $\triangle ABE \cong \triangle DCE$ (SAS)

C. $\triangle ABE \cong \triangle DCE$ (ASA)

D. $\triangle ABE \cong \triangle DCE$ (AAS)