



# MATHS

## BOOKS - SUBHASH PUBLICATION

### CONGRUENCE OF TRAIANGLES

#### Example

1. Complete the folloiwng statemetns: Two line segments are congruent if\_\_\_\_\_.



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2. Complete the following statements: Among two congruent angles, one has a measure of  $70^\circ$  the measure of the other angle is \_\_\_\_\_.



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3. Complete the following statements: When we write  $\sphericalangle A = \sphericalangle B$  we actually mean \_\_\_\_\_.



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4. Give any two real-life examples for congruent shapes.



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5. If  $\triangle ABC \cong \triangle FED$  under the correspondence  $ABC \leftrightarrow FED$ , write all the corresponding congruent parts of the triangle.



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6. if  $\triangle DEF \cong \triangle BCA$  write the parts of  
BCA that correspond to :  $\angle E \leftrightarrow \angle C$



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7. if  $\triangle DEF \cong \triangle BCA$  write the parts of  
BCA that correspond to :  $\angle EF$



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8. if  $\triangle DEF \cong \triangle BCA$  write the parts of  
BCA that correspond to :  $\angle F$



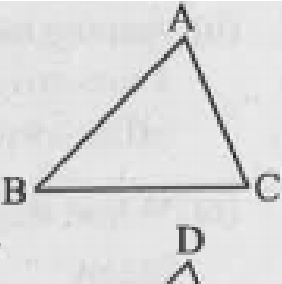
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9. Which congruence criterion do you use in the following: Given

use in the following?

(a) Given:  $AC = DF$   
 $AB = DE$   
 $BC = EF$

So,  $\triangle ABC \cong \triangle DEF$



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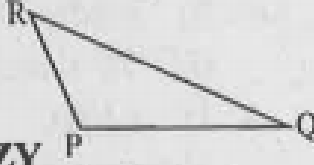
10. Which congruence criterion do you use in the following: Given

(b) Given:  $ZX = RP$

$RQ = ZY$

$\angle PRQ = \angle XZY$

So,  $\Delta PQR \cong \Delta XYZ$



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11. Which congruence criterion do you use in the following: Given

(c) Given:

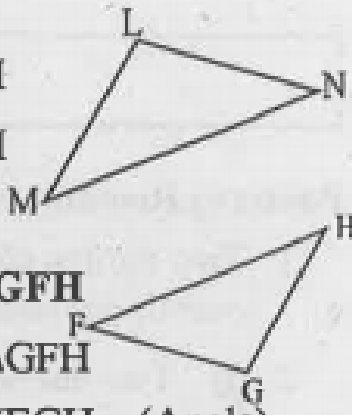
$\angle MLN = \angle FGH$

$\angle NML = \angle GFH$

$ML = FG$

So,  $\Delta LMN \cong \Delta GFH$

Sol. Given  $\Delta LMN \cong \Delta GFH$





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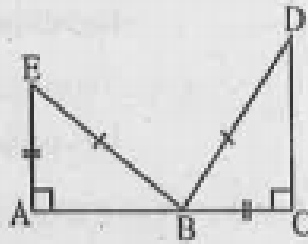
12. Which congruence criterion do you use in the following: Given

(d) Given:  $EB = DB$

$AE = BC$

$\angle A = \angle C = 90^\circ$

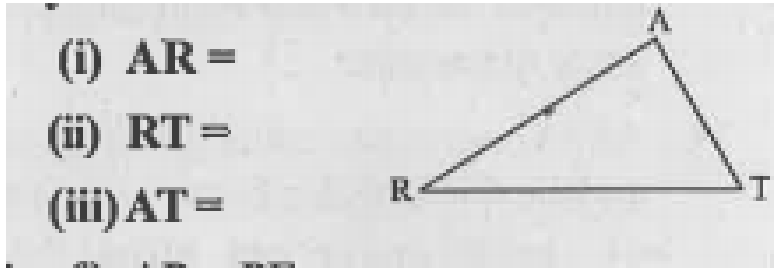
So,  $\triangle ABE \cong \triangle CDB$



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13. You want to show that  $\triangle ART \cong \triangle PEN$ ; If you have to use SSS criterion,

then you need to show



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14. If it is given that  $\angle T = \angle N$  and you are to use SAS criterion, you need to have :  $RT =$



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**15.** If it is given that  $\angle T = \angle N$  and you are to use SAS criterion, you need to have : PN=



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**16.** If it is given that  $AT=PN$  and you are to use ASA criterion, you need to have : ?

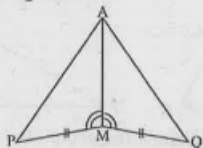


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17. If it is given that  $AT=PN$  and you are to use ASA criterion, you need to have : ?

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18. You have to show that  $\triangle AMP \cong \triangle AMQ$ . In the following proof, supply the missing reasons.



Steps	Reasons
(i) $PM = QM$	(i) ...
(ii) $\angle PMA = \angle QMA$	(ii) ...
(iii) $AM = AM$	(iii) ...
(iv) $\triangle AMP \cong \triangle AMQ$	(iv) ...

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19. In  $\triangle ABC$ ,  $\angle A = 30^\circ$ ,  $\angle B = 40^\circ$  and  $\angle C = 110^\circ$ . In  $\triangle PQR$ ,  $\angle P = 30^\circ$ ,  $\angle Q = 40^\circ$  and  $\angle R = 110^\circ$ . A student says that  $\triangle ABC \cong \triangle PQR$  by AAA congruence. Is he justified? Why or why not?

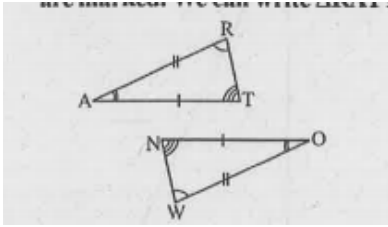


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20. In the figure, the two triangles are congruent. The corresponding parts are

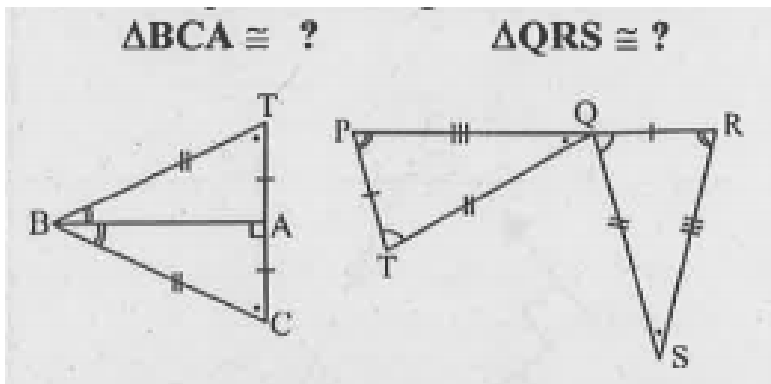
marked. We can write  $\triangle RAT \cong \triangle ONW$  =

?



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21. Complete the congruence statement:





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**22.** In a squared sheet, draw two triangles of equal areas such that: The triangles are congruent.



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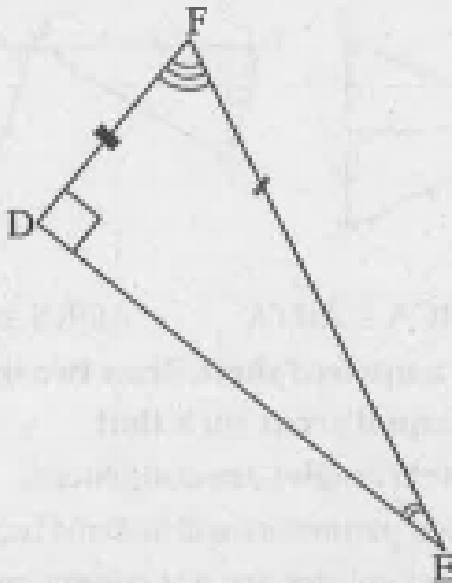
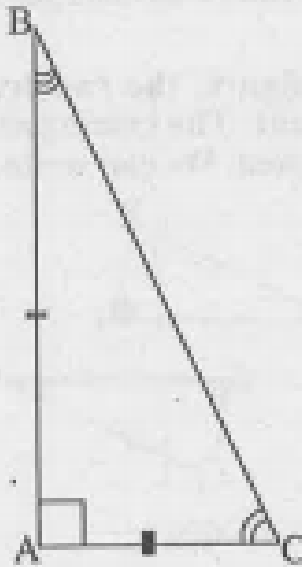
**23.** In a squared sheet, draw two triangles of equal areas such that: The triangles are congruent.



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**24.** Draw a rough sketch of two triangles such that they have five parts of congruent parts

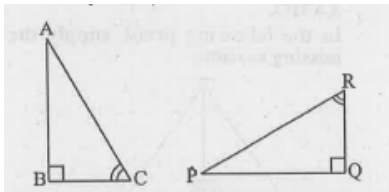
but still the triangles are not congruent.





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25. If  $\triangle ABC$  and  $\triangle PQR$  are to be congruent, name one additional pair of corresponding parts. What criterion did you use:



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