



MATHS

BOOKS - ICSE

SOLUTION OF RIGHT TRIANGLES

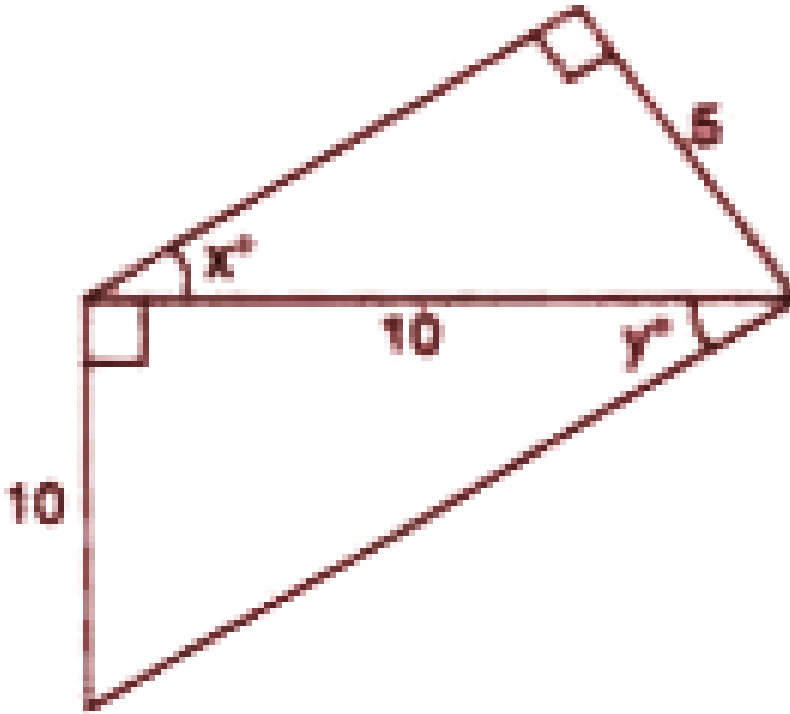
Questions

1. In a triangle ABC, right-angled at B, side BC = 20 cm and angle $A = 30^\circ$. Find the length of AB.



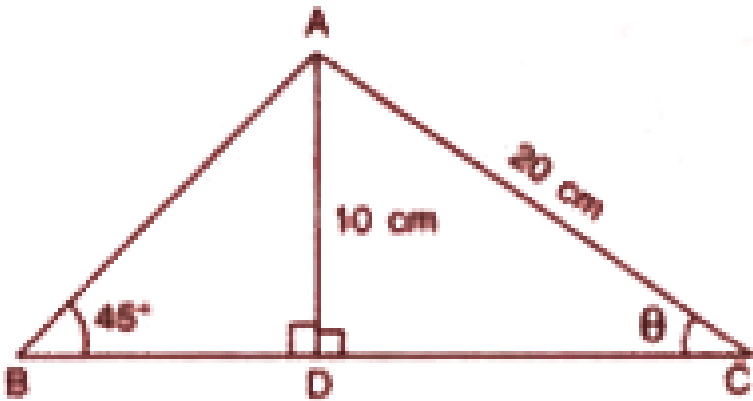
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2. Without calculating other lengths, use tables to find the angles x° and y° .



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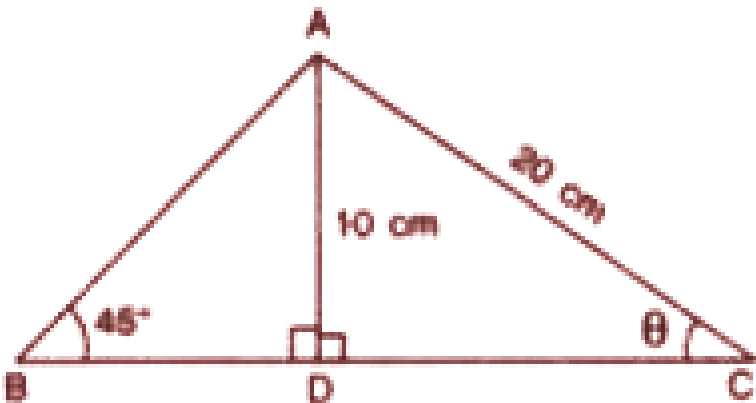
3. Use the information, given in the adjoining figure, to find :



(i) length of BD

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4. Use the information, given in the adjoining figure, to find :

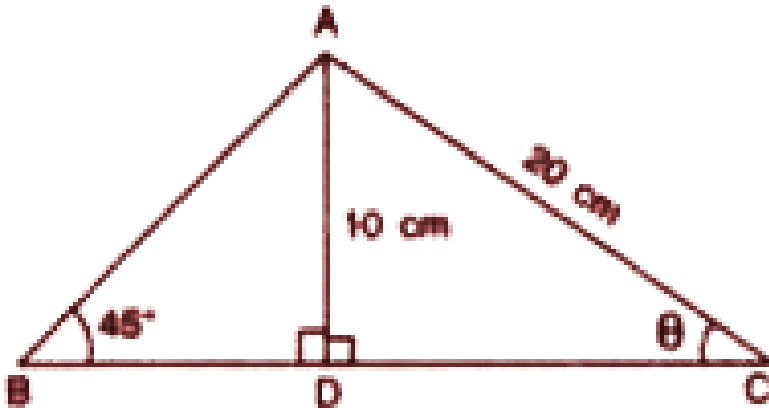


(ii) angle C i.e. θ



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5. Use the information, given in the adjoining figure, to find :

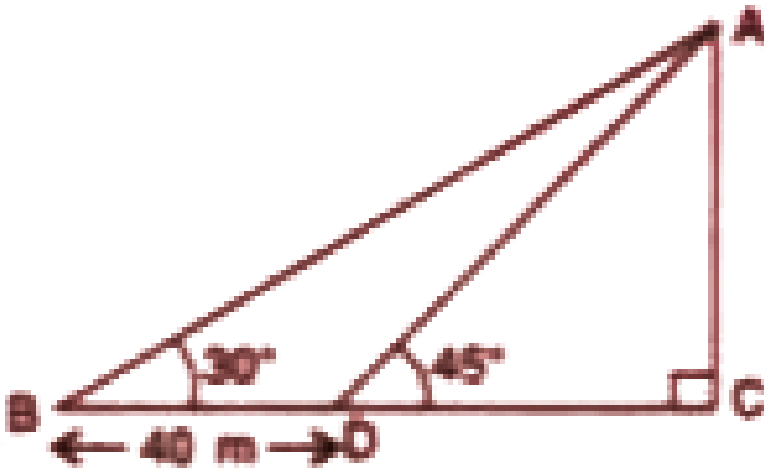


(iii) length of BC .



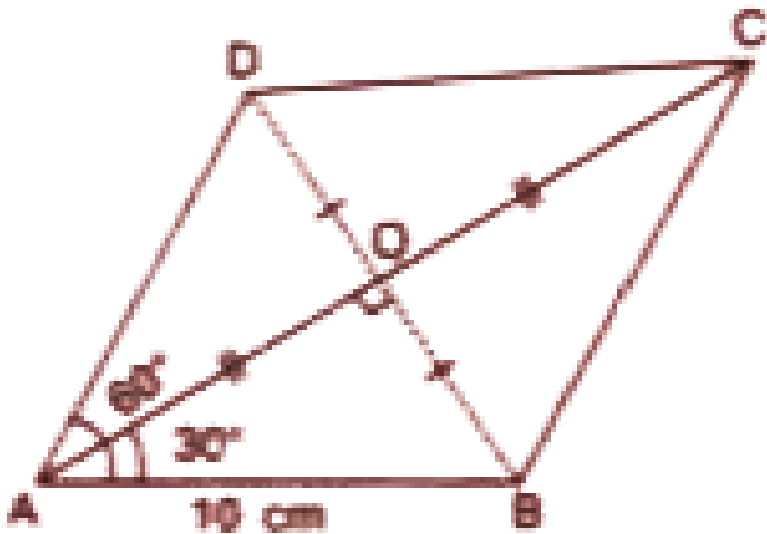
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6. From the adjoining figure, find the length of AC.



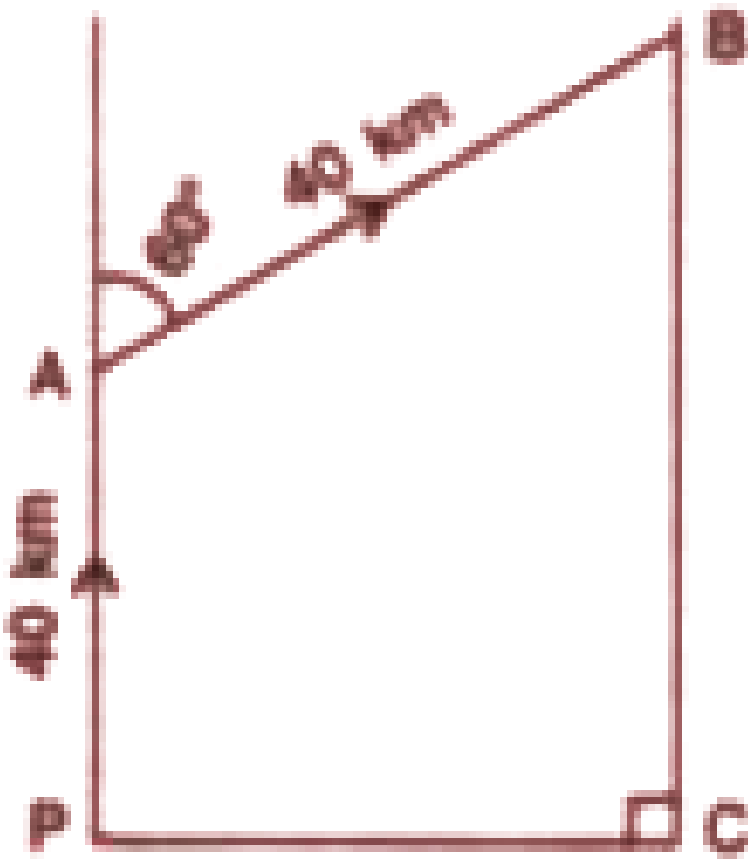
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7. In a rhombus $ABCD$, length of each side is 10 cm and $\angle A = 60^\circ$. Find the lengths of its diagonals AC and BD .



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8. In the given figure, a rocket is fired vertically upwards from its launching pad P. It first rises 40 km vertically upwards and then 40 km at 60° to the vertical. PA represents the first stage of the journey and AB the second. C is a point vertically below B on the horizontal level as P, calculate :

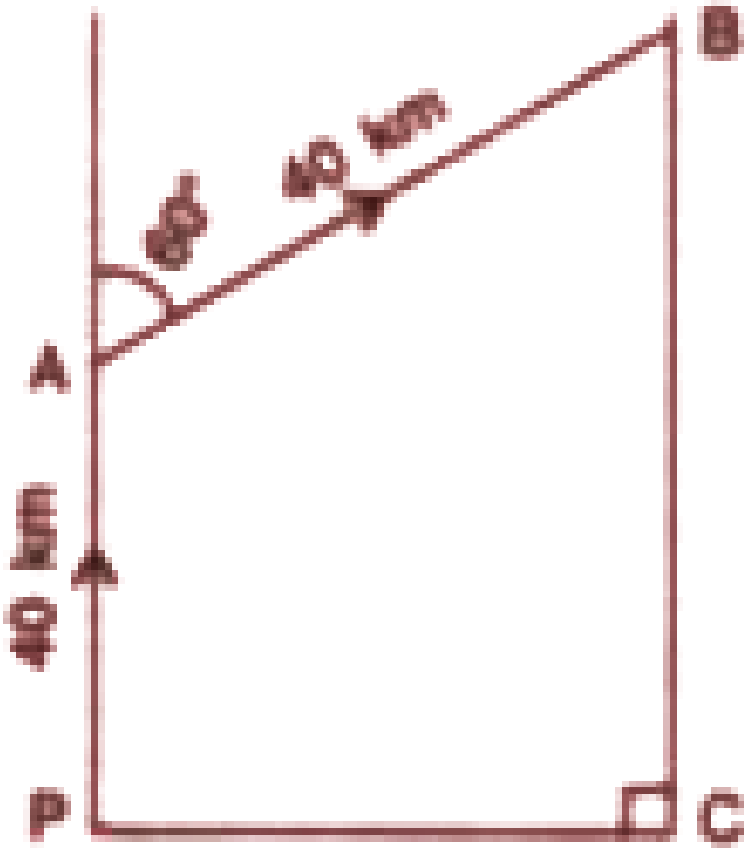


(i) the height of the rocket when it is at point B.

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9. In the given figure, a rocket is fired vertically upwards from its launching pad P. It first rises 40 km vertically upwards and

then 40 km at 60° to the vertical. PA represents the first stage of the journey and AB the second. C is a point vertically below B on the horizontal level as P, calculate :



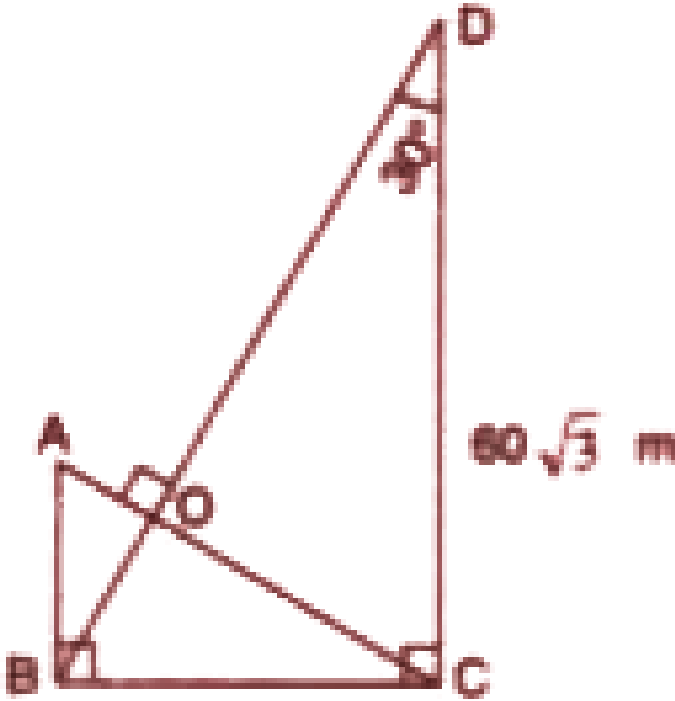
(ii) the horizontal distance of point C from P.

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10. In the given figure,

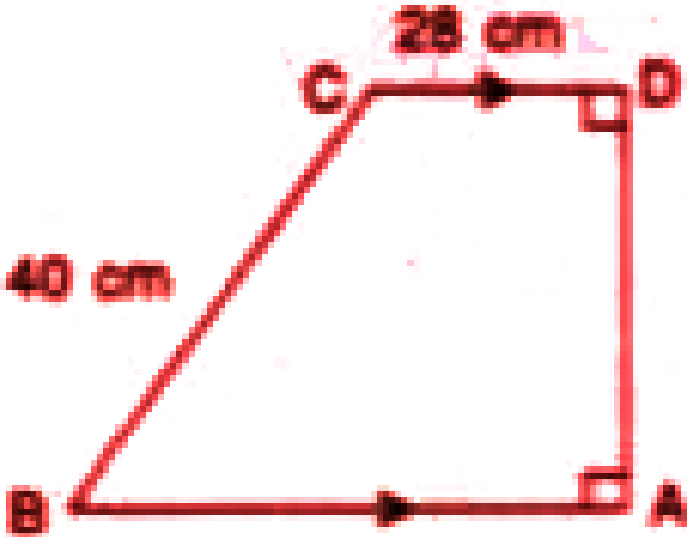
$AB \perp BC$, $DC \perp BC$, $BD \perp AC$, $\angle D = 30^\circ$ and $DC = 60\sqrt{3}$

m. Find the length of AB.



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11. In the given figure, ABCD is a trapezium with angle $C = 120^\circ$, $DC = 28$ cm and $BC = 40$ cm. Find :

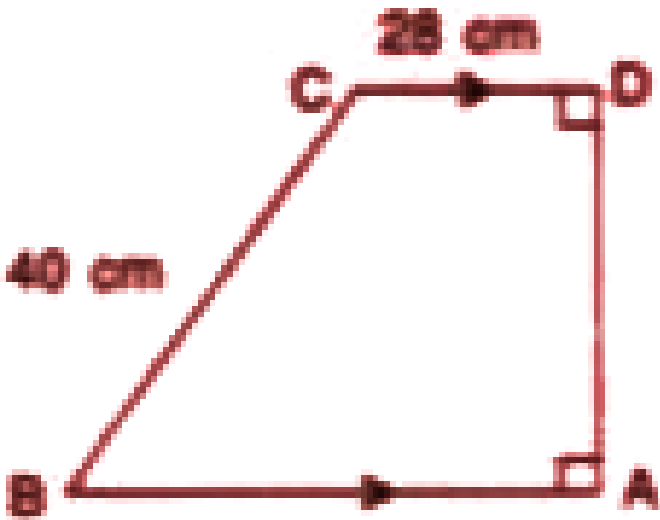


(i) AB



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12. In the given figure, ABCD is a trapezium with angle $C = 120^\circ$, $DC = 28$ cm and $BC = 40$ cm. Find :

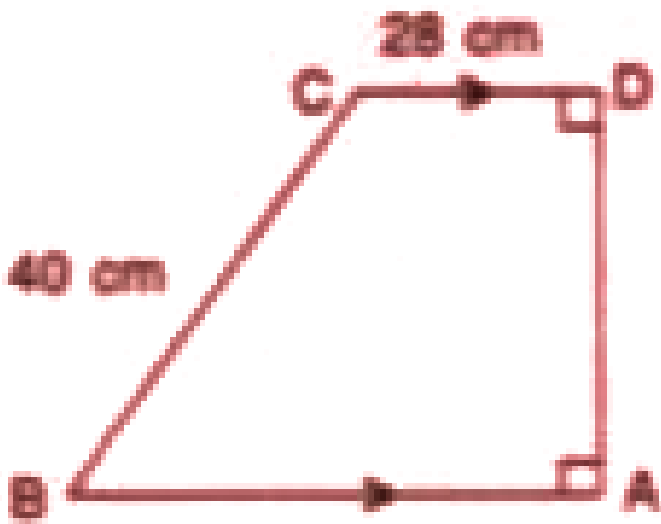


(ii) AD



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13. In the given figure, ABCD is a trapezium with angle $C = 120^\circ$, $DC = 28$ cm and $BC = 40$ cm. Find :

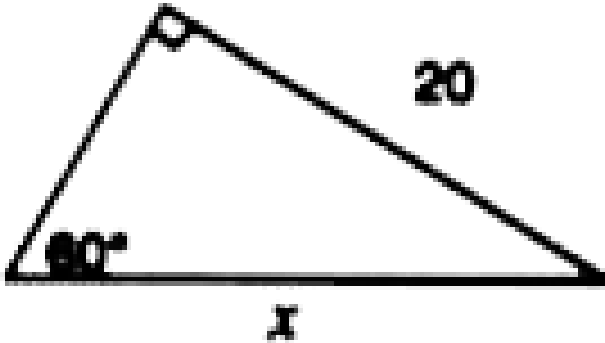


(iii) the area of the trapezium.

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Exercise 24

1. Find 'x', if : (i)



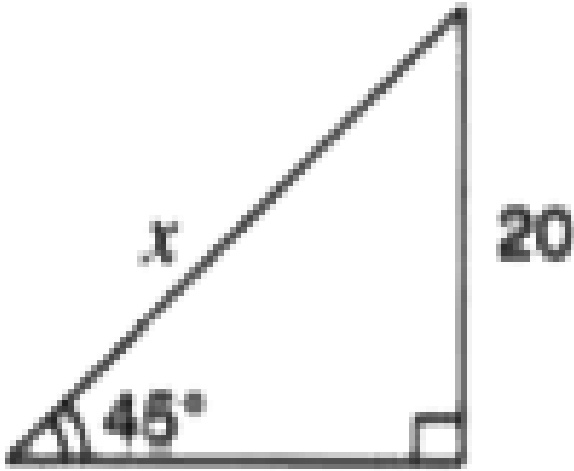
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2. Find 'x', if : (ii)



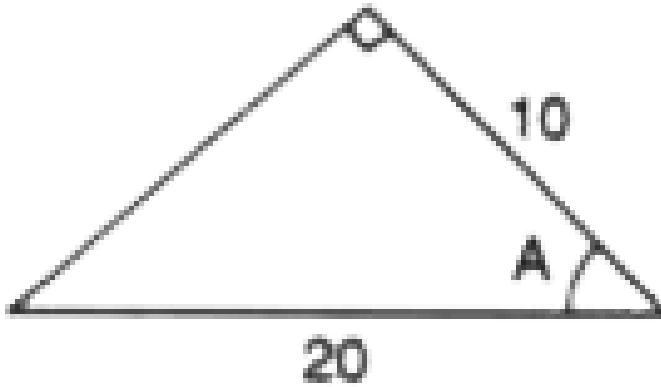
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3. Find 'x' , if : (iii)



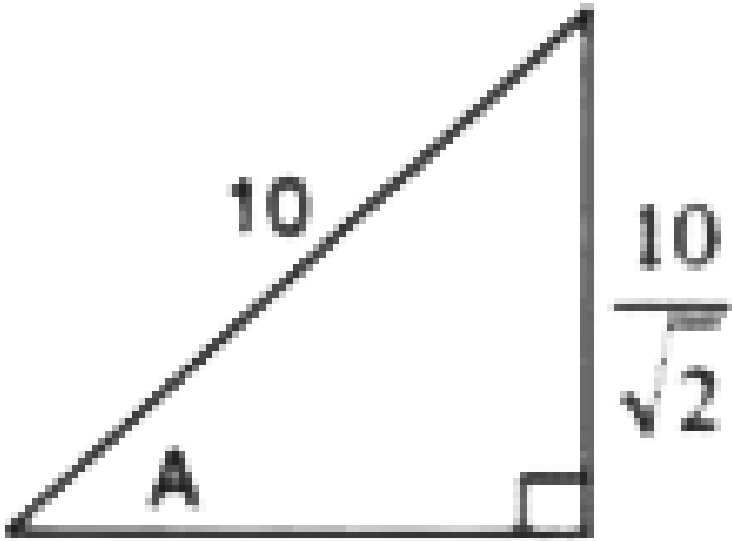
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4. Find angle 'A' if : (i)



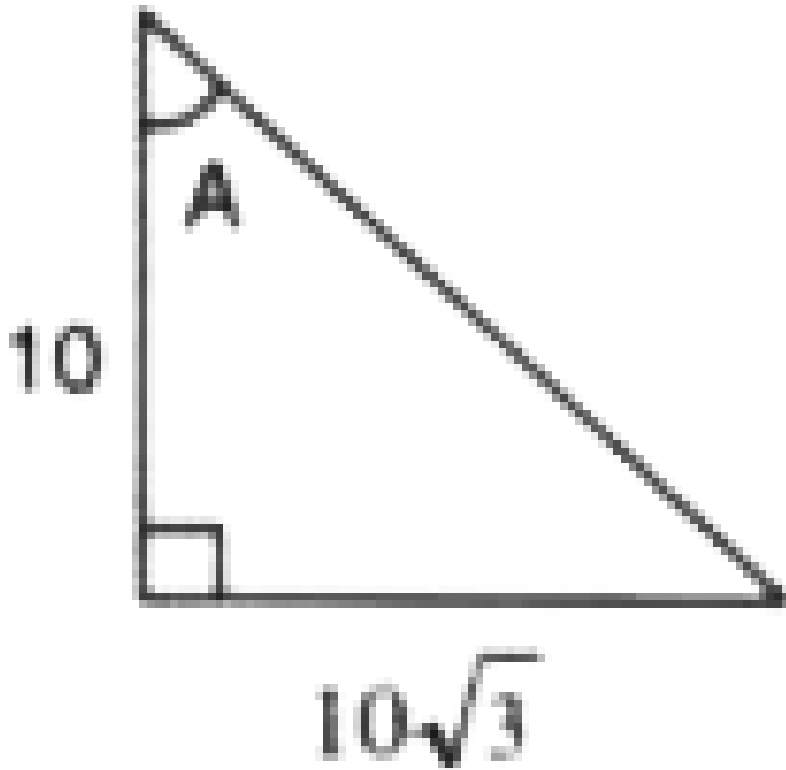
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5. Find angle 'A' if : (ii)



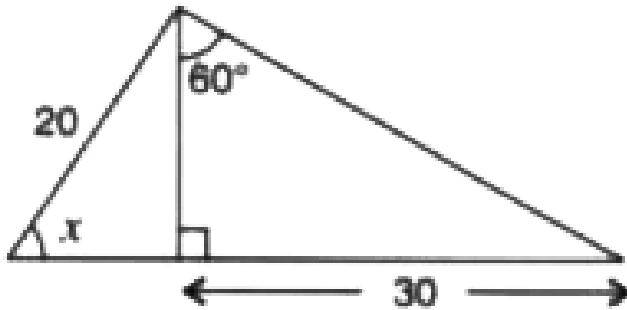
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6. Find angle 'A' if : (iii)



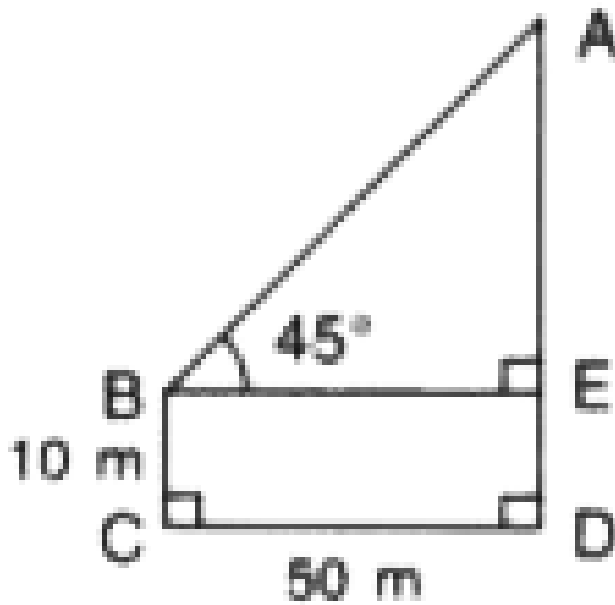
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7. Find angle 'x' if :



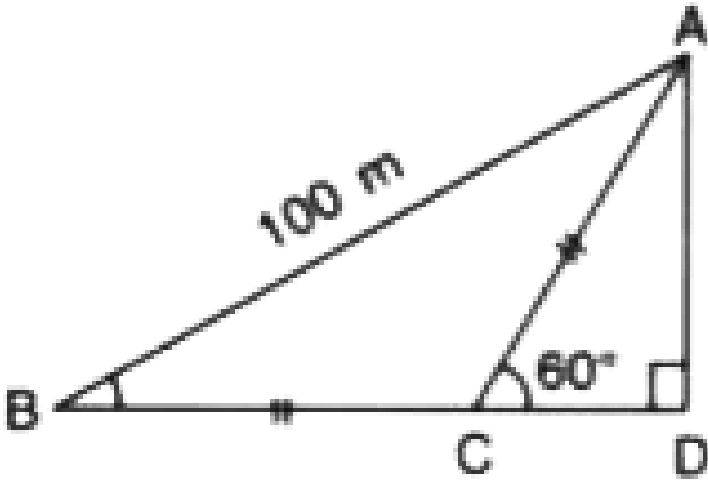
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8. Find AD, if : (i)



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9. Find AD, if : (ii)



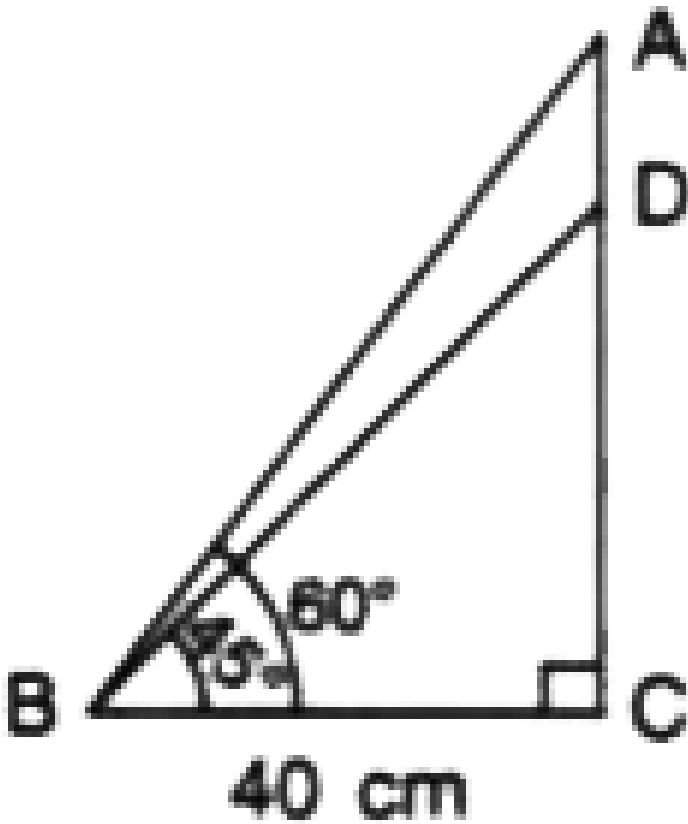
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10. Find the length of AD.

Given : $\angle ABC = 60^\circ$,

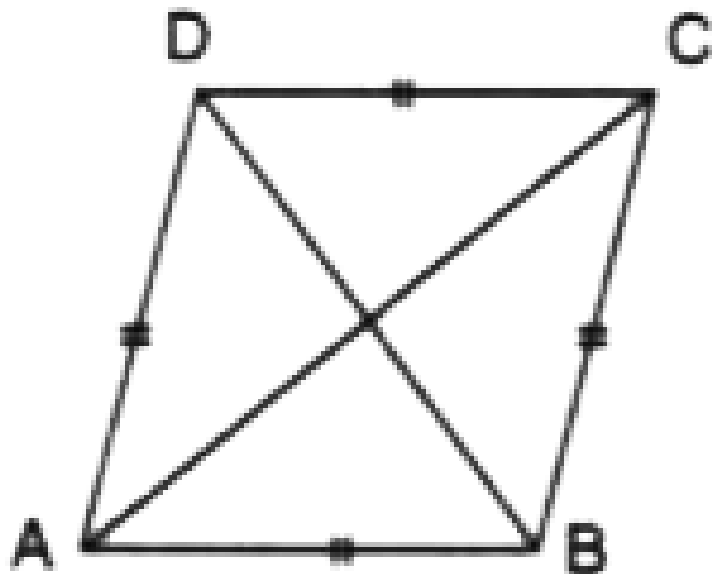
$\angle DBC = 45^\circ$

and $BC = 40$ cm.



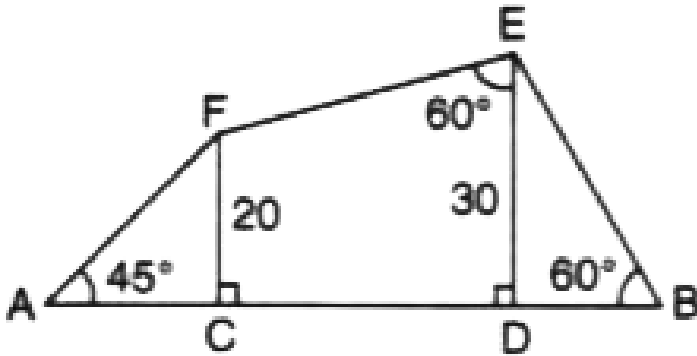
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11. Find lengths of diagonals AC and BD . Given $AB = 60$ cm and $\angle BAD = 60^\circ$.



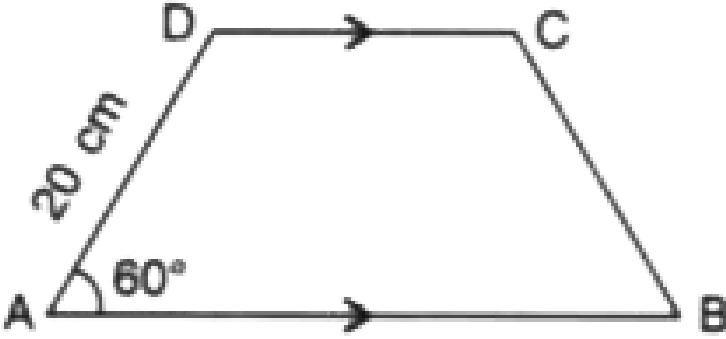
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12. Find AB.



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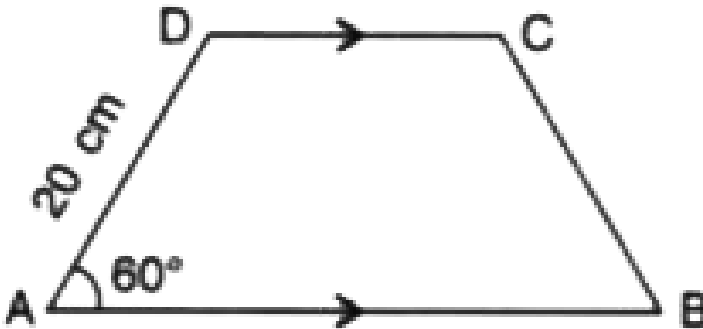
13. In trapezium $ABCD$, as shown, $AB \parallel DC$, $AD = DC = BC = 20$ cm and $\angle A = 60^\circ$. Find:



(i) length of AB

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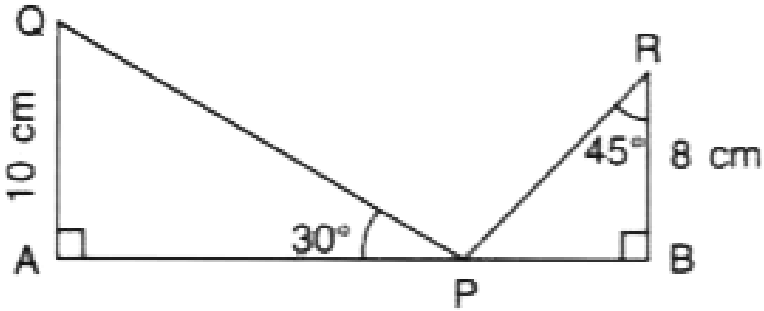
14. In trapezium ABCD, as shown, $AB \parallel DC$, $AD = DC = BC = 20$ cm and $\angle A = 60^\circ$. Find:



(ii) distance between AB and DC.

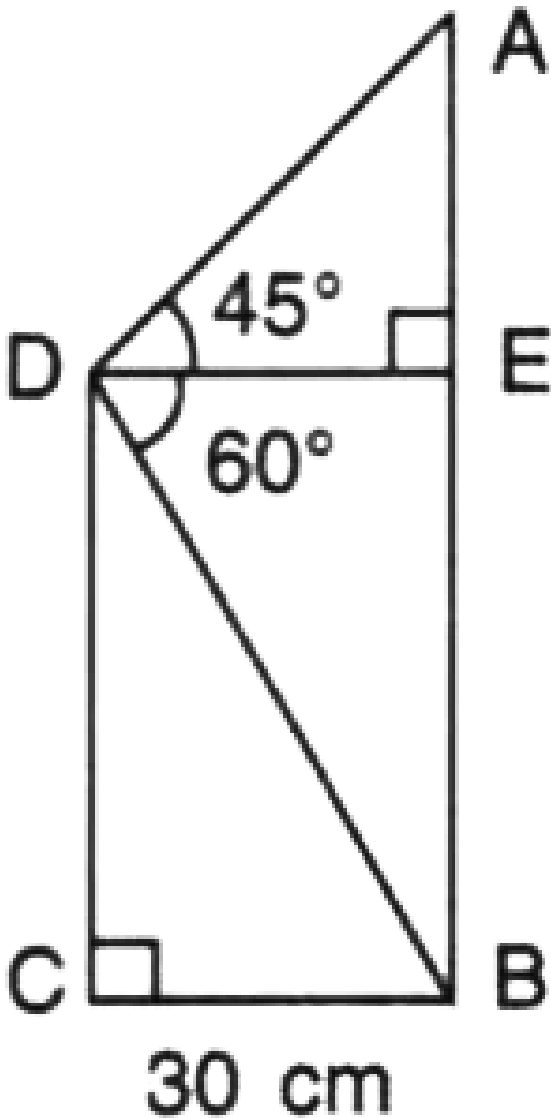
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15. Use the information given to find the length of AB.



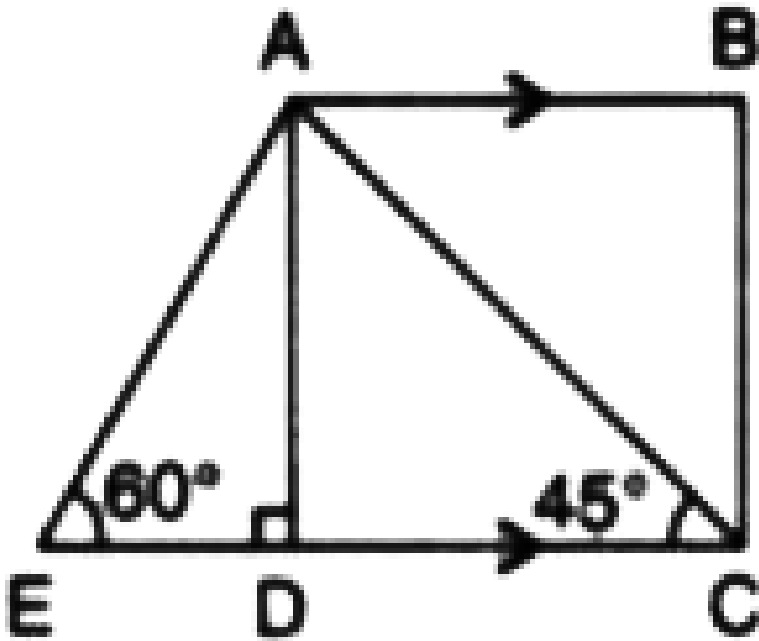
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16. Find the length of AB.



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17. In the given figure, AB and EC are parallel to each other. Sides AD and BC are 2 cm each and are perpendicular to AB.

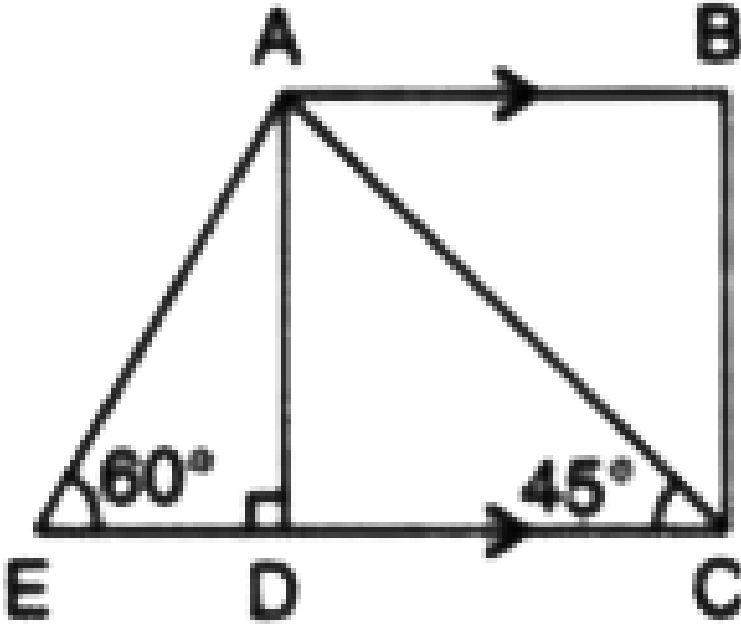


Given that $\angle AED = 60^\circ$ and $\angle ACD = 45^\circ$, calculate :

(i) AB

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18. In the given figure, AB and EC are parallel to each other. Sides AD and BC are 2 cm each and are perpendicular to AB.

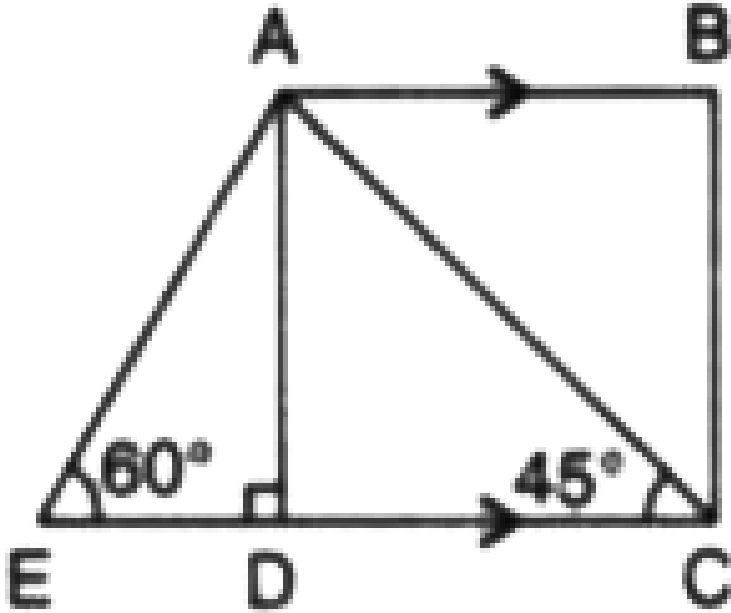


Given that $\angle AED = 60^\circ$ and $\angle ACD = 45^\circ$, calculate :

(ii) AC

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19. In the given figure, AB and EC are parallel to each other. Sides AD and BC are 2 cm each and are perpendicular to AB.



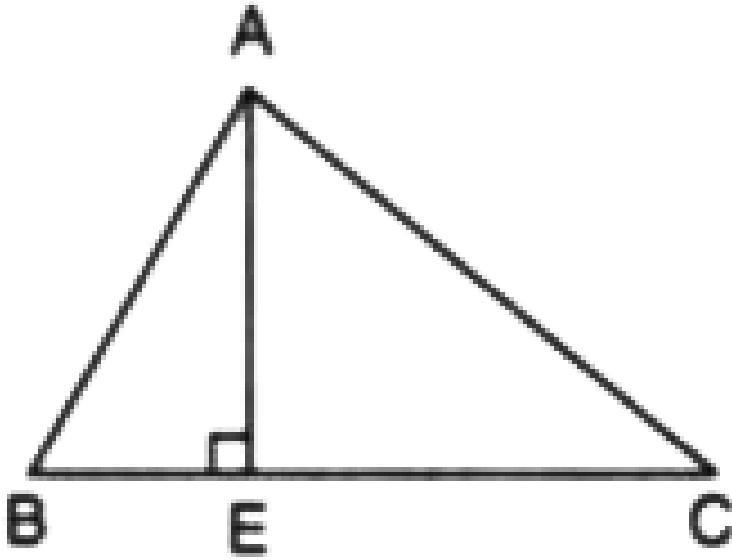
Given that $\angle AED = 60^\circ$ and $\angle ACD = 45^\circ$, calculate :

(iii) AE



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20. In the given figure, $\angle B = 60^\circ$, $AB = 16$ cm and $BC = 23$ cm.



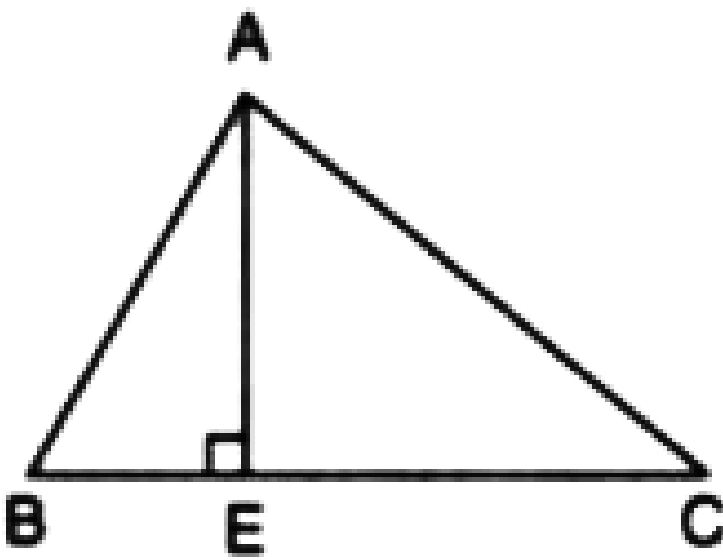
Calculate:

(i) BE



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21. In the given figure, $\angle B = 60^\circ$, $AB = 16$ cm and $BC = 23$ cm.



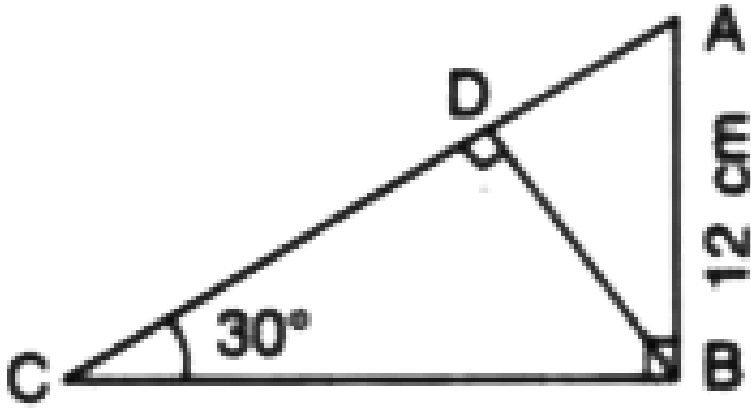
Calculate:

(ii) AC.



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22. Find :

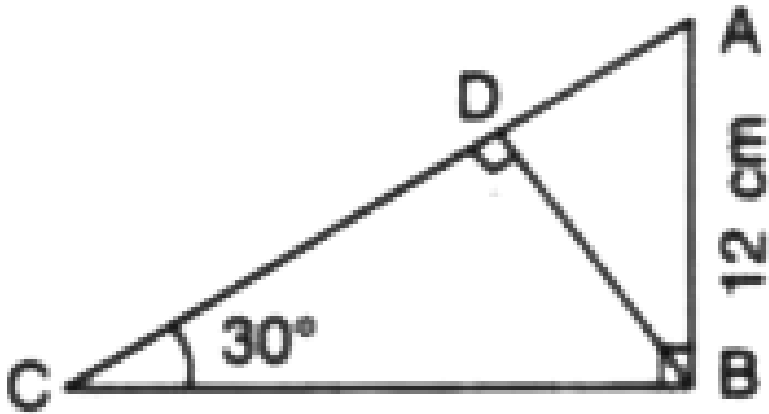


(i) BC



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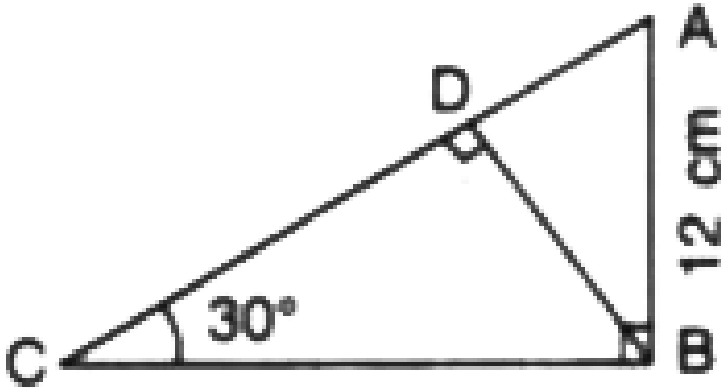
23. Find :



(ii) AD

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24. Find :



(iii) AC

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25. In right-angle triangle ABC, $\angle B = 90^\circ$. Find the magnitude of angle A. If :

(i) AB is $\sqrt{3}$ times at BC

(ii) BC is $\sqrt{3}$ times of AB

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26. In right-angle triangle ABC , $\angle B = 90^\circ$. Find the magnitude of angle A . If :

(i) AB is $\sqrt{3}$ times at BC

(ii) BC is $\sqrt{3}$ times of AB



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27. A ladder is placed against a vertical tower. If the ladder makes an angle of 30° with the ground and reached upto a height of 15 m of the tower, find the length of the ladder.



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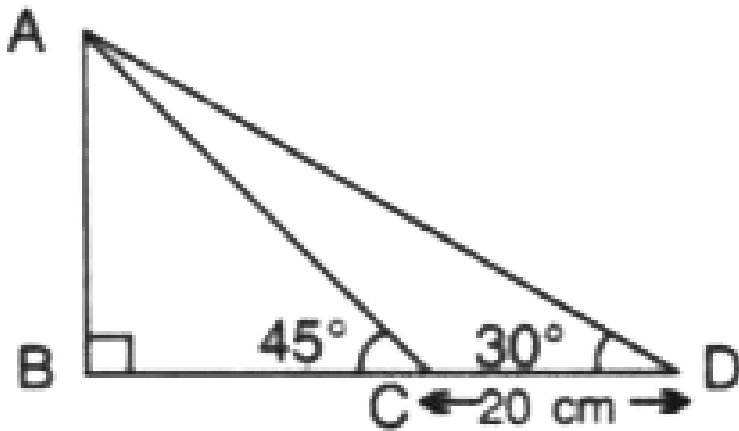
28. A kite is attached to a 100 m long string. Find the greatest height reached by the kite when its string makes an angle of

60° with the travel round.



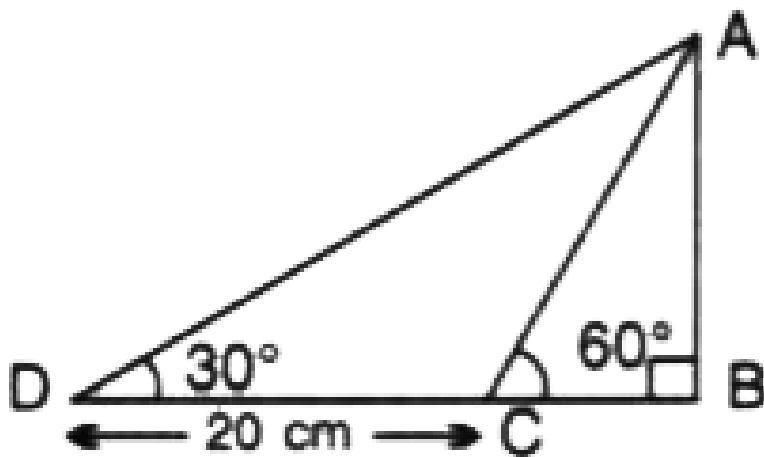
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29. Find AB and BC, if: (i)



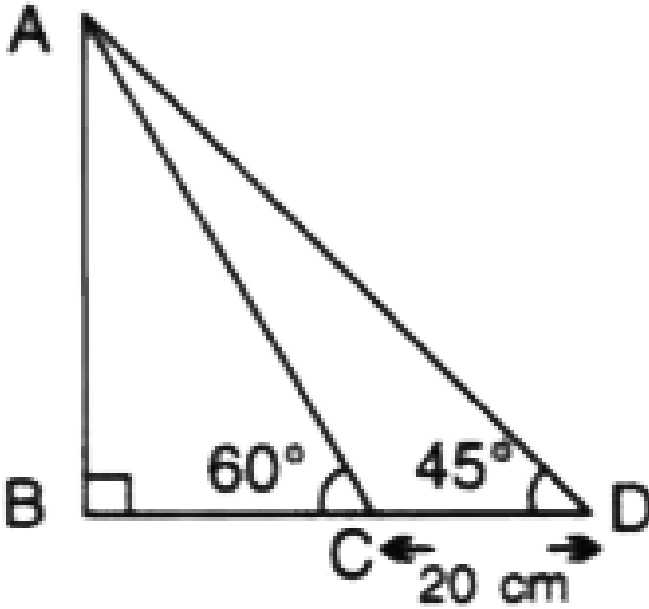
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30. Find AB and BC, if: (ii)



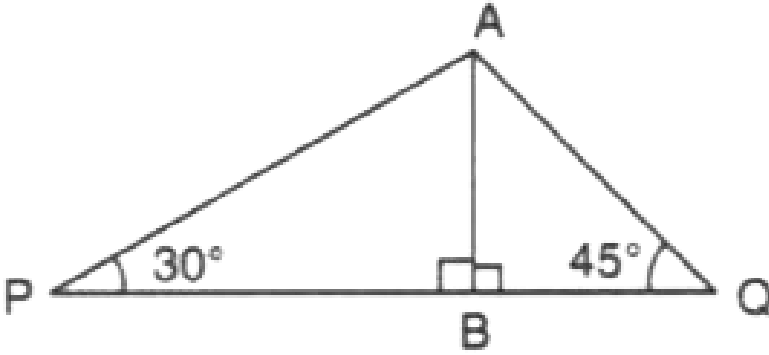
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31. Find AB and BC, if: (iii)



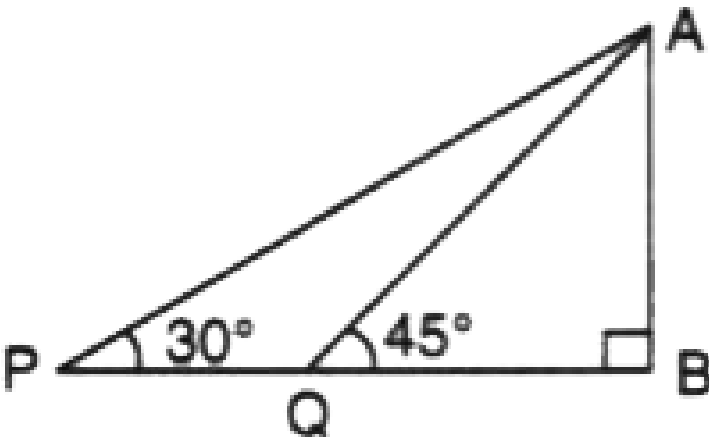
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32. Find PQ , if $AB = 150$ m, $\angle P = 30^\circ$ and $\angle Q = 45^\circ$ (i)



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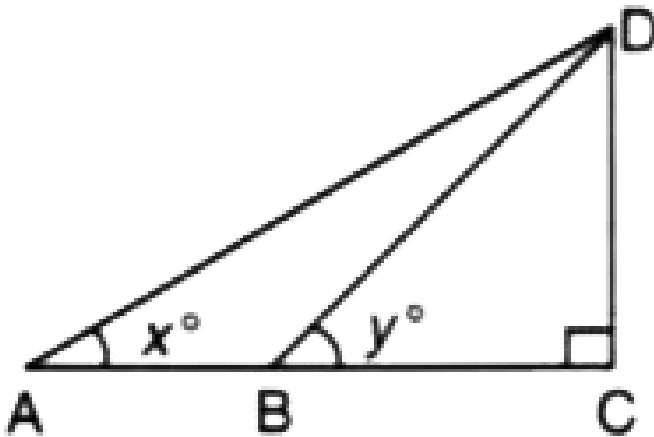
33. Find PQ , if $AB = 150$ m, $\angle P = 30^\circ$ and $\angle Q = 45^\circ$ (ii)





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34. If $\tan x^\circ = \frac{5}{12}$, $\tan y^\circ = \frac{3}{4}$ and $AB = 48$ m, find the length of CD .



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35. The perimeter of a rhombus is 96 cm and obtuse angle of it is 120° . Find the lengths of its diagonals.



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