MATHS

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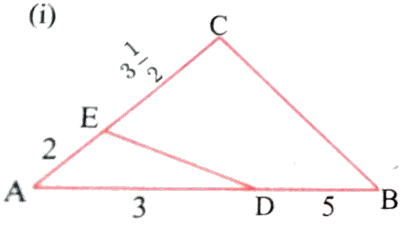
GEOMETRY

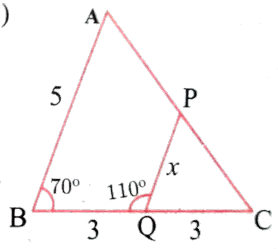
Solution To Exercise 4 1

1. Check whether the which triangles are similar and find the value of x.

(i)



(ii)



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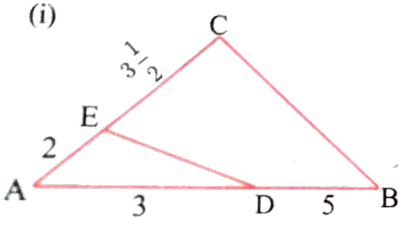
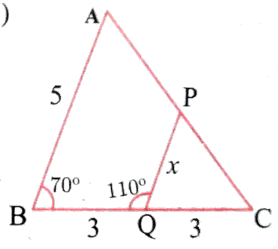
2. Check whether the which triangles are similar and find the value of x.

(i)



(ii)



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3. A girl looks the reflection of the top of the lamp post on the mirror which is 6.6 m away from the foot of the lamppost. The girl whose height is 1.25 m is standing 2.5 m away from the mirror. Assuming the mirror is placed on the ground facing the sky and the girl, mirror and the lamppost are in a same line, find the height of the lamp post ?

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4. A vertical stick of length 6 m casts a shadow 400 cm long on the ground and at the same time a tower casts a shadow 28 m long. Using similarity, find the height of the tower.

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5. Two triangles QPR and QSR, right angled at P and S respectively are drawn on the same base QR and on the same side of QR. If PR and SQ intersect at T, prove that $PT \times TR = ST \times TQ$.

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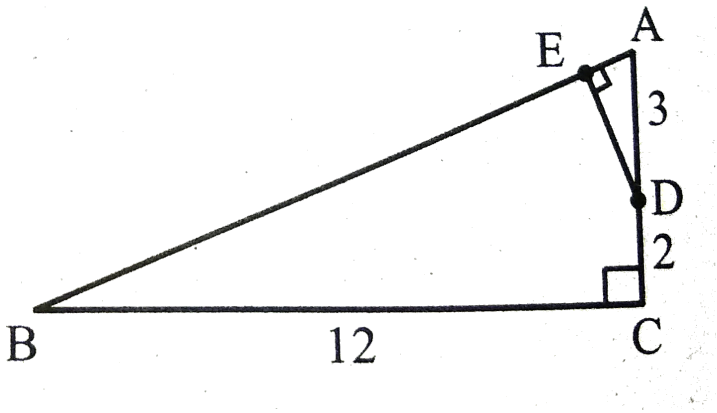
6. In the adjacent figure, ΔABC is right angled at C and $DE \perp AB$. Prove that $\Delta ABC \sim \Delta ADE$ and hence

find the lengths of AE and DE ?



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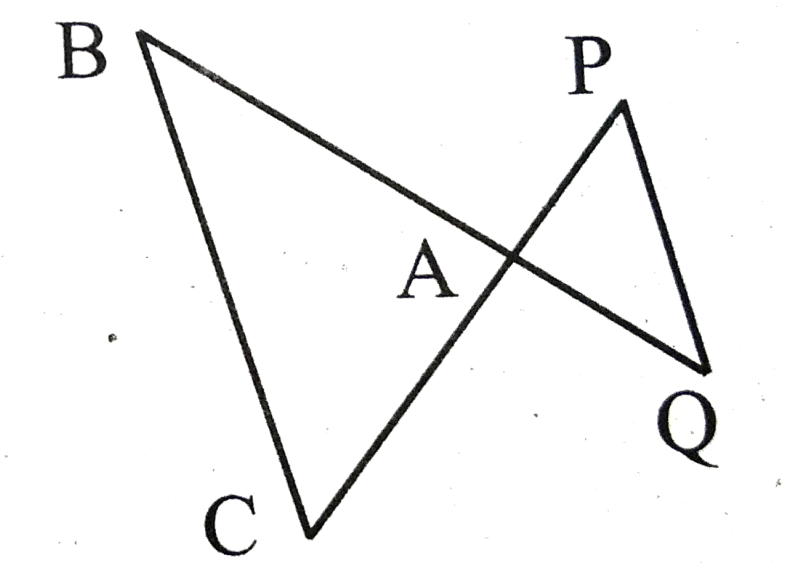
7. In the adjacent figure, $\Delta ACB \sim \Delta APQ$. If BC=8 cm , PQ=4 cm, BA=6.5 cm and AP=2.8 cm, find CA and AQ.



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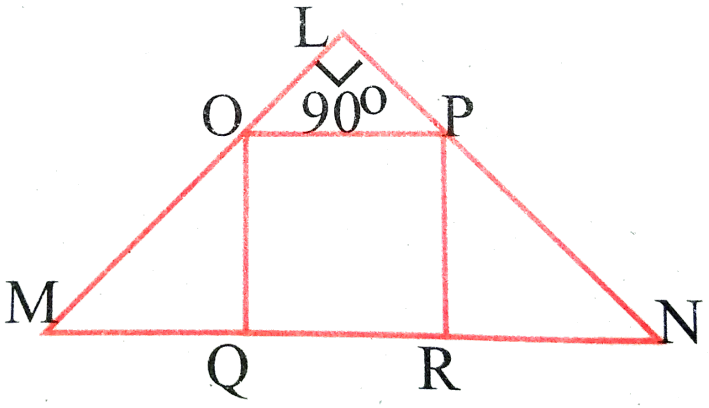
8. In figure OPRQ is a square and $\angle MLN = 90^\circ$. Prove that

$(i)\Delta LOP \sim \Delta QMO (ii)\Delta LOP \sim \Delta RPN$

$(iii)\Delta QMO \sim \Delta RPN (iv) QR^2 = MQ \times RN.$



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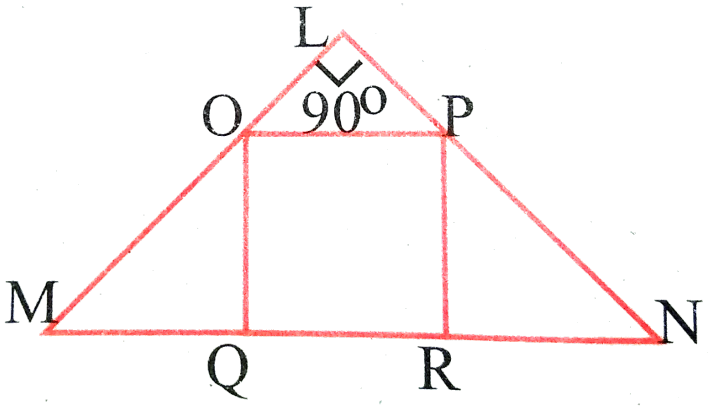

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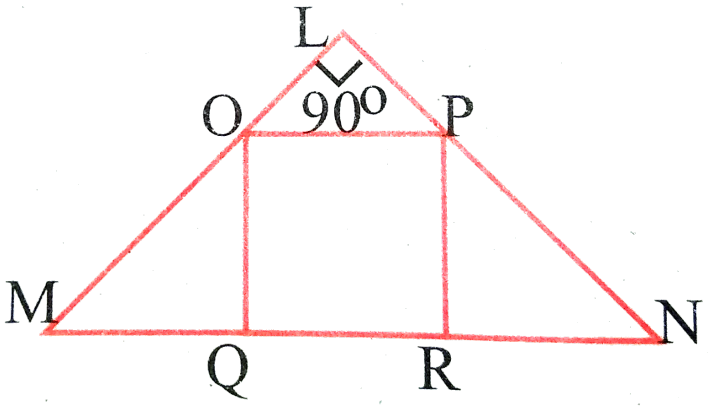

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Prove that

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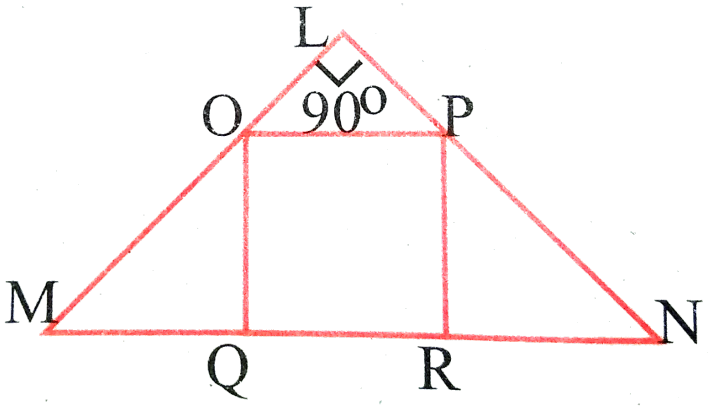
$(iii)\Delta QMO \sim \Delta RPN (iv) QR^2 = MQ \times RN.$



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12. If $\Delta ABC \sim \Delta DEF$ such that area of ΔABC is $9cm^2$ and the area of ΔDEF is $16cm^2$ and BC=2.1 cm. Find the length of EF.

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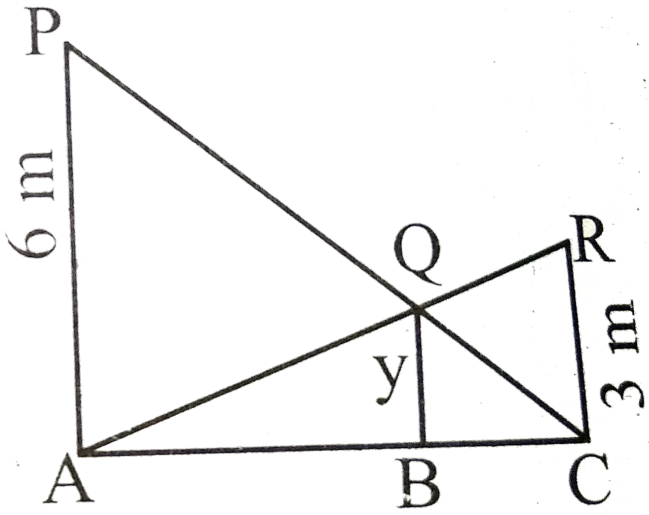
13. Two vertical poles of heights 6 m and 3 m are erected above a horizontal ground AC. Find the value of y.



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14. Construct a triangle slmilar to a given triangle PQR with its sides equal to $\frac{2}{3}$ of the corresponding sides of

the triangle PQR (scale factor $\frac{2}{3}$).

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15. Construct a triangle similar to a given triangle LMN with its sides equal to $\frac{4}{5}$ of the corresponding sides of the triangle LMN (scale factor $\frac{4}{5}$).

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16. Construct a triangle similar to a given triangle ABC with its sides equal to $\frac{6}{5}$ of the corresponding sides of the triangle ABC (scale factor $\frac{6}{4}$).

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17. Construct a triangle similar to a given triangle PQR with its sides equal to $\frac{7}{3}$ of the corresponding sides of the triangle PQR (scale factor $\frac{7}{3}$).

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Solution To Exercise 4 2

1. In ΔABC, D and E are points on the sides AB and AC respectively such that $DE \| BC$

(i) If $\frac{AD}{DB} = \frac{3}{4}$ and AC=15 cm find AE.

(ii) If AD=8x-7, DB=5x-3, AE= 4x-3 and EC=3x - 1, find the value of x.

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2. In ΔABC, D and E are points on the sides AB and AC respectively such that $DE \| BC$

(i) If $\frac{AD}{DB} = \frac{3}{4}$ and AC=15 cm find AE.

(ii) If AD=8x-7, DB=5x-3, AE= 4x-3 and EC=3x - 1, find the value of x.

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3. ABCD is a trapezium in which $AB \| DC$ and P,Q are points on AD and BC respectively, such that $PQ \| DC$ if PD=18 cm , BQ= 35 cm and QC= 15 cm, find AD.

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4. In ΔABC, D and E are points on the sides AB and AC respectively. For each of the following cases show that DE||BC

(i) AB=12 cm , AD=8 cm, AE=12 cm and AC=18 cm.

(ii) AB=5.6 cm, AD=1.4 cm, AC=7.2 cm and AE=1.8 cm.

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5. In ΔABC, D and E are points on the sides AB and AC respectively. For each of the following cases show that DE||BC

(i) AB=12 cm , AD=8 cm, AE=12 cm and AC=18 cm.

(ii) AB=5.6 cm, AD=1.4 cm, AC=7.2 cm and AE=1.8 cm.

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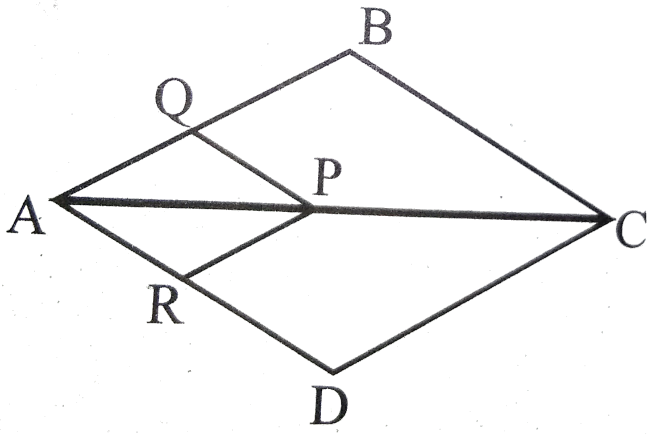
6. In fig. if PQ||BC and PR||CD prove that

$(i)\frac{AR}{AD} = \frac{AQ}{AB}(ii)\frac{QB}{AQ} = \frac{DR}{AR}.$



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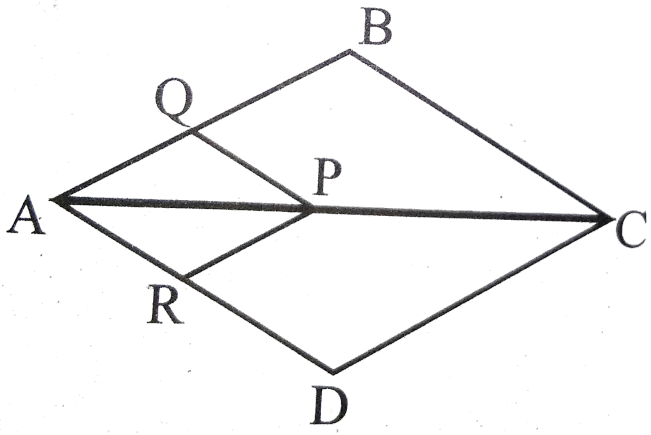
7. In fig. if PQ||BC and PR||CD prove that

$$(i)\frac{AR}{AD}=\frac{AQ}{AB}(ii)\frac{QB}{AQ}=\frac{DR}{AR}.$$



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8. Rhombus PQRS is inseribed in ΔABC such that $\angle B$ is one of its angle. P, Q and R lie on AB, AC and BC respectively. If AB=12 cm and BC=6 cm, find the sides PQ, RB of the rhombus.

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9. In trapezlum ABCD, AB || DC, E and F are points on non-parallel sides AD and BC respectively, such that EF || AB. Show that $\frac{AE}{ED} = \frac{BF}{FC}$.

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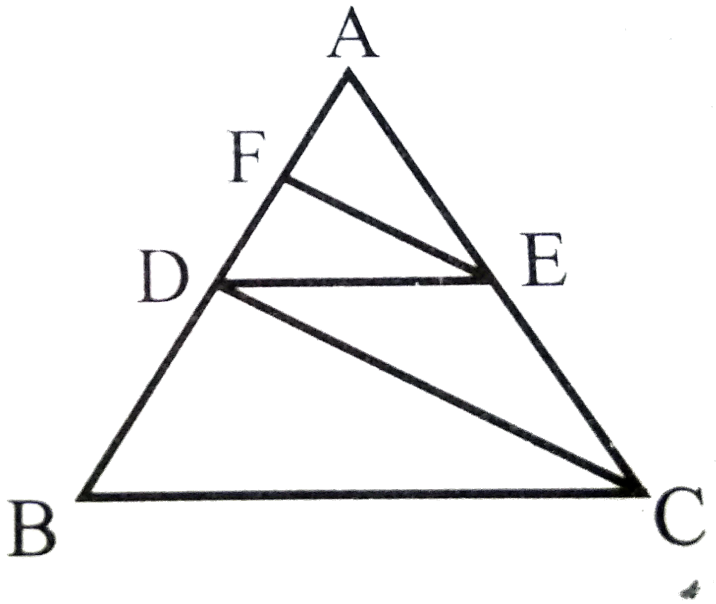
10. In figure DE|| BC and CD||EF. Prove that $AD^2 = AB \times AF$.



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11. In a ΔABC , AD is the bisector of $\angle A$ meeting side BC at D, if AB=10 cm, AC =14 cm and BC=6 cm, find BD and DC.

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12. Check whether AD is bisector of $\angle A$ of ΔABC in each of the following

(i) AB=5 cm, AC=10 cm, BD=1.5 cm and CD=3.5 cm.

(ii) AB=4 cm, AC=6 cm, BD=1.6 cm and CD=2.4 cm.

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13. Check whether AD is bisector of $\angle A$ of ΔABC in each of the following

(i) AB=5 cm, AC=10 cm, BD=1.5 cm and CD=3.5 cm.

(ii) AB=4 cm, AC=6 cm, BD=1.6 cm and CD=2.4 cm.

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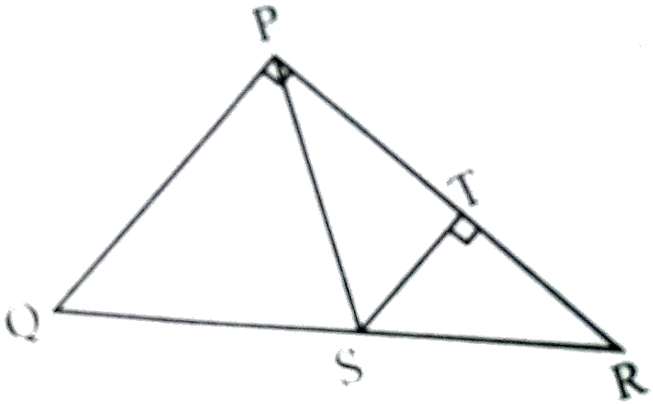
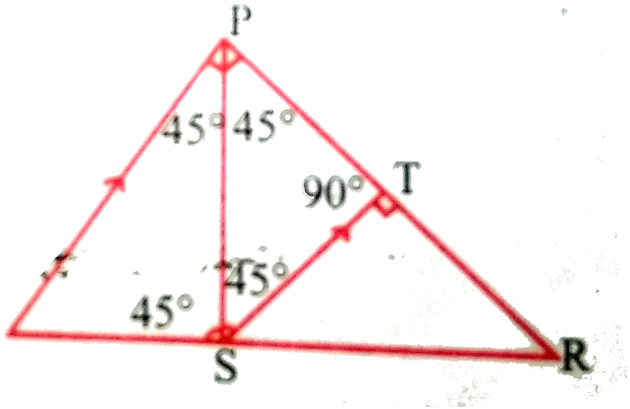
14. In figure $\angle QPC = 90^\circ$, PS is its bisector. If $ST \perp PR$, prove that $ST \times (PQ + PR) = PQ \times PR$.





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15. ABCD is a quadrilateral in which AB= AD, the bisector of $\angle BAC$ and $\angle CAD$ intersect the sides BC and CD at the points E and F respectively. Prove that EF || BD.

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16. Construct a ΔPQR which the base $PQ = 4.5cm, \angle R = 35^\circ$ and the median from R to RG is 6 cm.

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17. Construct a ΔPQR in which QR= 5 cm, $P = 40^\circ$ and the median PG from P to QR is 4.4 cm. Find the length of the altitude from P to QR.

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18. Construct a ΔPQR such that $QR = 6.5cm, \angle P = 60^\circ$ and the altitude from P to QR is of length 4.5 cm.

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19. Construct a ΔABC such that $AB = 5.5cm, \angle C = 25^\circ$ and the altitude from C to AB s 4 cm.

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20. Draw a triangle ABC of base $BC = 5.6cm, \angle A = 40^\circ$ and the bisector of $\angle A$ meets BC at D such that CD = 4 cm .

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21. Draw ΔPQR such that PQ=6.8 cm, vertical angle is 50° and the bisector of the vertical angle meets the base at D where PD=5.2 cm.

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Solution To Exercise 4 3

1. A man goes 18 m due east and then 24 m due north. Find the distance of his current position from the starting point ?

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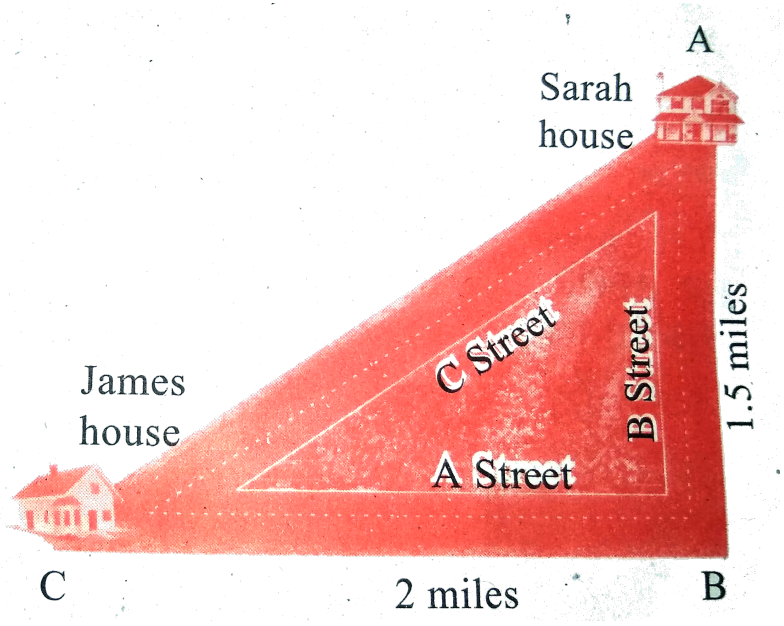
2. There are two paths that one can choose to go from Sarah's house to James house. One way is to take C street, and the other way requires to take A street and then B street. How much shorter is the direct path along C street ? (Using figure).



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3. To get from point A to point B you must avoid walking through a pond. You must walk 34 m south and 41 m east. To the nearrest meter, how many meters would be saved if it were possible to make a way through the pond ?

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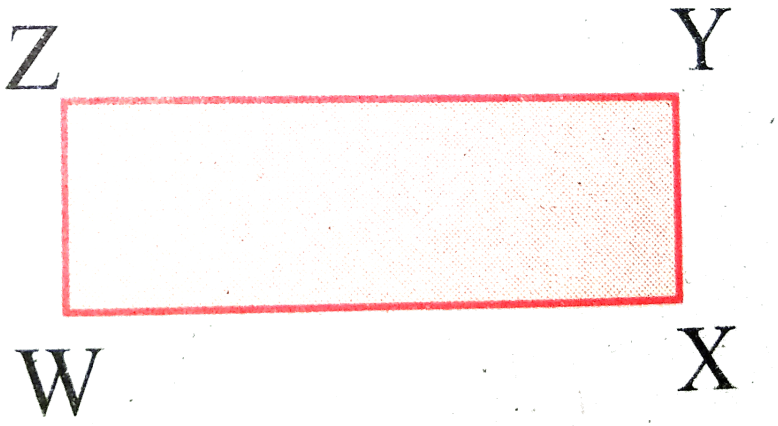
4. In the rectangle WXYZ, XY+YZ=17 cm and XZ+YW=26 cm. Calculate the length and breadth of the rectangle

?



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5. The hypotenuse of a right triangle is 6 m more than twice of the shortest side. If the third side is 2 m less than the hypotenuse, find the sides of the triangle ?

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6. 5 m long ladder is placed leaning towards a vertical wall such that it reaches the wall at a point 4 m high. If the foot of the ladder is moved 1.6 m towards the wall, then find the distance by which the top of the ladder would slide upwards on the wall.

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7. The perpendicular PS on the base QR of ΔPQR intersects QR at S, such that QS=3 SR. Prove that $2PQ^2 = 2PR^2 + QR^2$.

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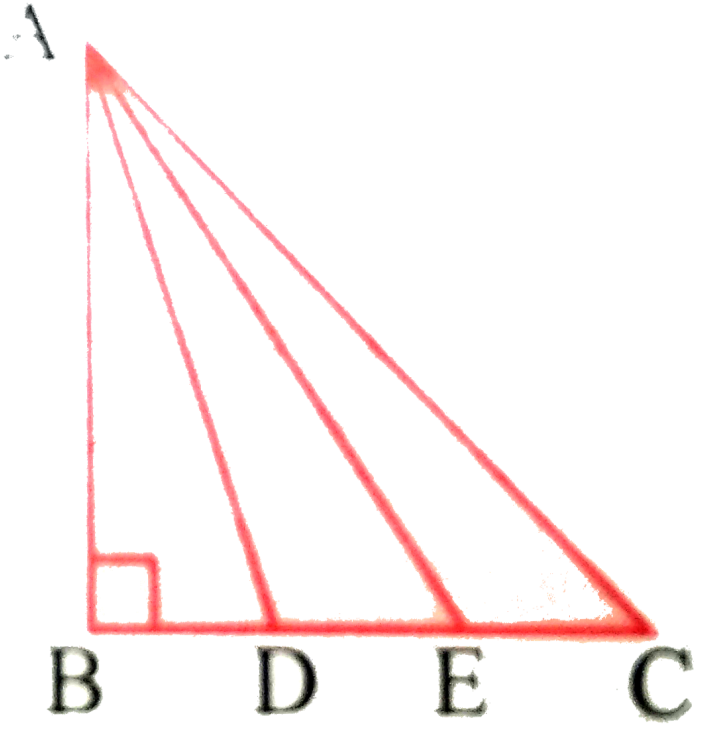
8. In the adjacent figure, ABC is a right angled triangle with right angle at B and points D, E trisect BC. Prove that $8AE^2 = 3AC^2 + 5AD^2$.



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Solution To Exercise 4 4

1. The length of the tangent to a circle from a point P, which is 25 cm away from the centre is 24 cm. What is the radius of the circle ?

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2. ΔLMN is a right angled triangle with $\angle L = 90^\circ$. A circle is inscribed in it. The lengths of the sides containing the right angle are 6 cm and 8 cm. Find the radius of the circle.

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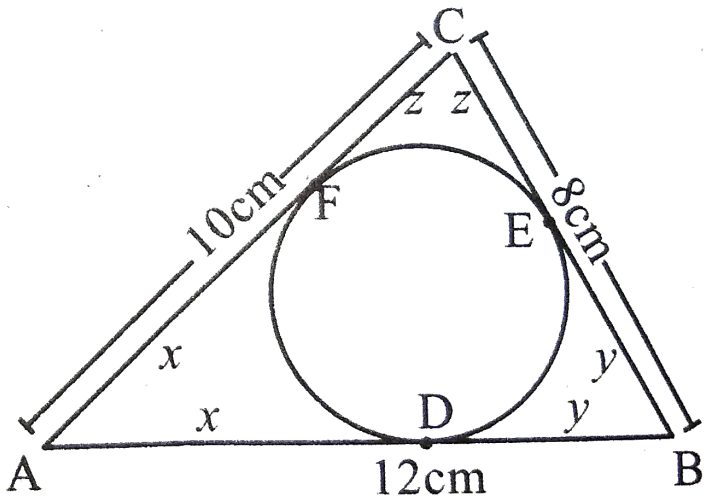
3. A circle is inscribed in ΔABC having sides 8 cm, 10 cm and 12 cm as shown in figure, Find AD, BE and CF.



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4. PQ is a tangent drawn from a point P to a circle with centre O and QOR is a diameter of the circle such that $\angle POR = 120^\circ$. Find $\angle OPQ$.

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5. A tangent ST to a circle touches it at B. AB is a chord such that $\angle ABT = 65^\circ$, Find $\angle AOB$, where O is the centre of the circle.

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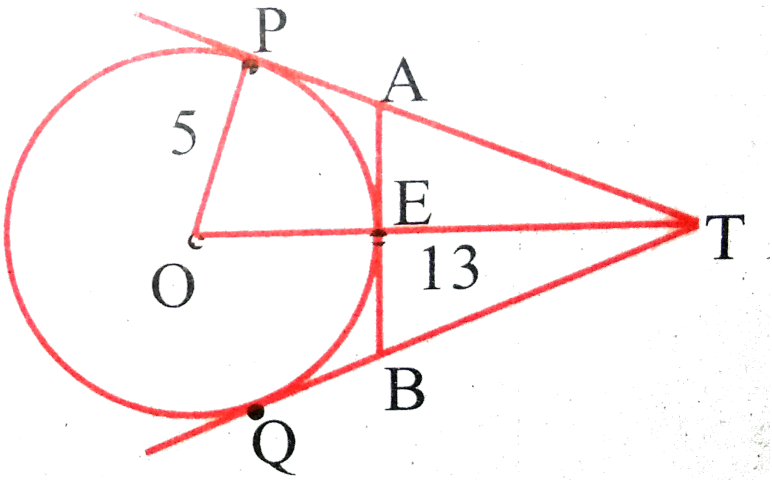
6. In figure, O is the centre of the circle with radius 5 cm. T is a point such that OT=13 cm and OT intersects the circle E, if AB is the tangent ot the circle at E, find

the length of AB.



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7. In two concentric circles, a chord of length 16 cm of larger circle becomes a tangent to the smaller circle whose radius is 6 cm. Find the radius of the larger circle.

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8. Two circles with centres O and O' of radii 3cm and 4 cm, respectively intersect at two points P and Q, such that OP and O' P are tangents to the two circles. Find the length of the common chord PQ.

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9. Show that the angle bisectors of a triangle are concurrent.

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10. In ΔABC, with $\angle B = 90^\circ$, BC=6 cm and AB=8 cm, D is a point on AC such that AD=2 cm and E is the midpoint of AB. Join D to E and extend it to meet at F. Find BF.

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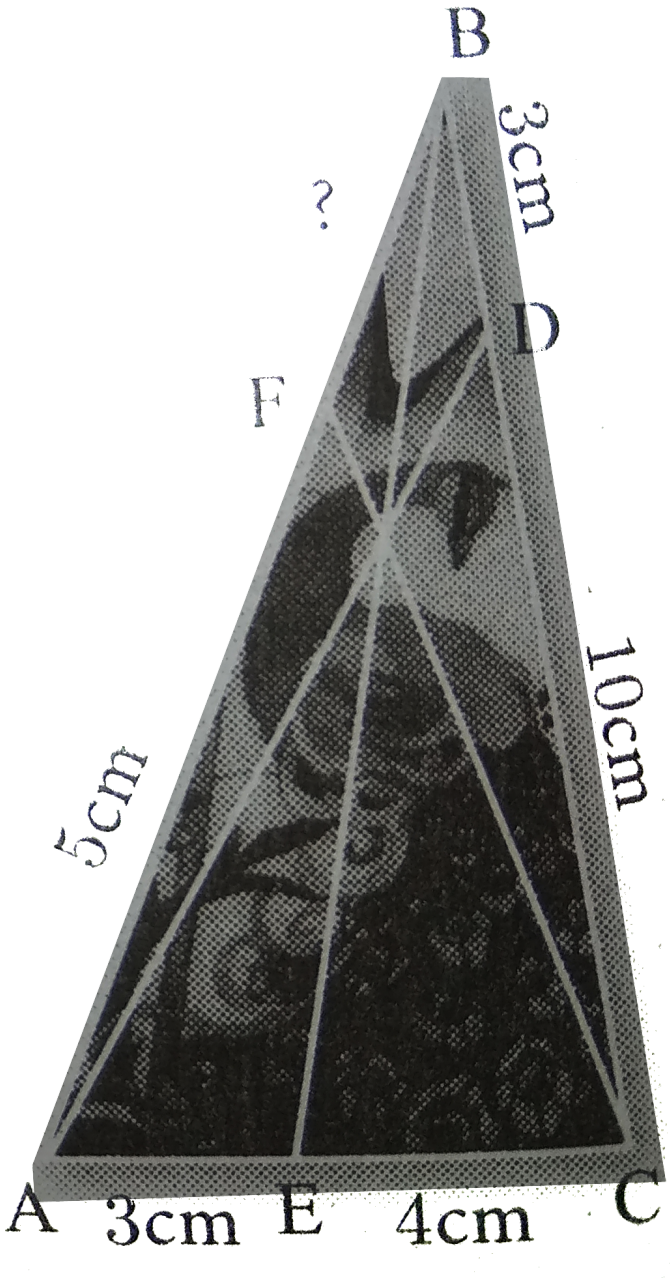
11. An artist has created a triangular stained glass window and has one strip of small length left before completing the window. She needs to figure out the length of left out portion based on the lengths of the

other sides as shown in the figure .



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12. Draw a tangent at any point R on the circle of radius 3.4 cm and centre at P ?

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13. Draw a circle of radius 4.5 cm. Take a point on the circle. Draw the tangent at that point using the alternate segment theorem.

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14. Draw the two tangents from a point which is 10 cm away from the centre of a circle of raiud 5 cm. Also, measure the lengths of the tangents.

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15. Take a point which is 11 cm away from the centre of a circle of radius 4 cm and draw the two tangents to the circle from that point.

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16. Draw the two tangents from a point which is 5 cm away from the centre of a circle of diameter 6 cm. Also, measure the lengths of the tangents.

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17. Draw a tangent to the circle from the point P having radius 3.6 cm, and centre at O. Point P is at a distance 7.2 cm from the centre.

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Solution To Exercise 4 5

1. If in triangles ABC and EDF, $\frac{AB}{DE} = \frac{BC}{FD}$ then they will be similar, when

A. $\angle B = \angle E$

B. $\angle A = \angle D$

C. $\angle B = \angle D$

D. $\angle A = \angle F$

Answer: C

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2. In $\Delta LMN, \angle L = 60^\circ, \angle M = 50^\circ,$ If $\Delta LMN \sim \Delta PQR$

then the value of $\angle R$ is

A. 40°

B. 70°

C. 30°

D. 110°

Answer: B

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3. If ΔABC is an isosceles triangle with $\angle C = 90^\circ$ and AC=5 cm, then AB is

A. 2.5 cm

B. 5 cm

C. 10 cm

D. $5\sqrt{2}cm$

Answer: D

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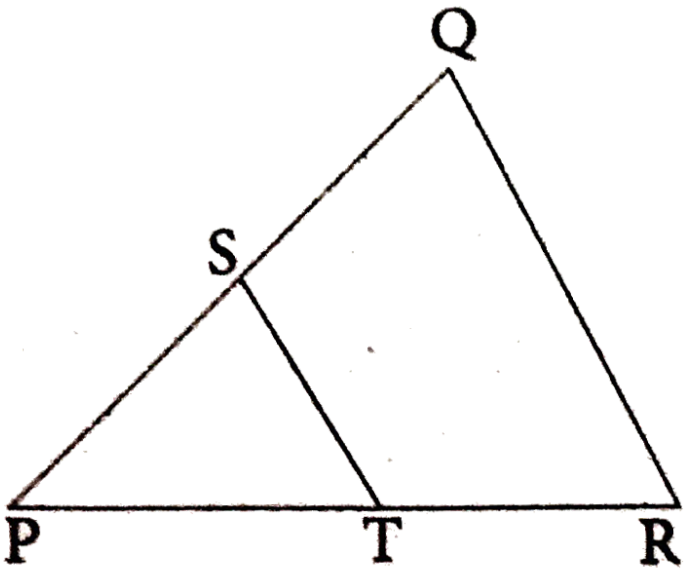
4. In a given figure, ST||QR, PS=2 cm and QS=3 cm. Then the ratio of the area of $\triangle PQR$ to the area of

$\triangle PST$ is ___.



A. $25:4$

B. $25:7$

C. $25:11$

D. $25:13$

Answer: A

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5. The perimeters of two similar triangles ΔABC and ΔPQR are 36 cm and 24 cm respectively. IF PQ=10 cm, then the length of AB is

A. $6\frac{2}{3}cm$

B. $\frac{10\sqrt{6}}{3}cm$

C. $66\frac{2}{3}cm$

D. 15 cm

Answer: D

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6. If in ΔABC, DE|| BC . AB=3.6 cm, AC=2.4 cm and AD=2.1 cm then the length of AE is

A. 1.4 cm

B. 1.8 cm

C. 1.2 cm

D. 1.05 cm

Answer: A

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7. In a ΔABC, Adis the bisector of $\angle BAC$. If AB=8 cm, BD=6 cm and DC=3 cm. The length of the side AC is

A. 6 cm

B. 4 cm

C. 3 cm

D. 8 cm

Answer: B

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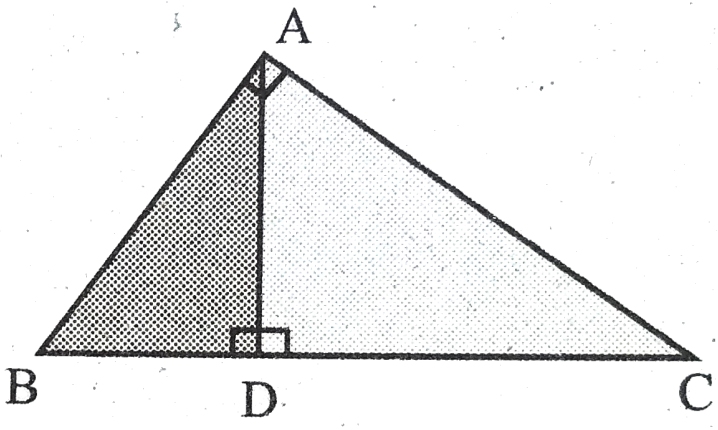
8. In the adjacent figure $\angle BAC = 90^\circ$ and $AD \perp BC$ then



A. $BD.CD = BC^2$

B. $AB.AC = BC^2$

C. $BD.CD = AD^2$

D. $AB.AC = AD^2$

Answer: C

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9. Two poles of heights 6 m and 11 stand vertically on a plane ground. If the distance between their feet is 12 m, what is the distance between their tops ?

A. 13 m

B. 14 m

C. 15 m

D. 12.8 m

Answer: A

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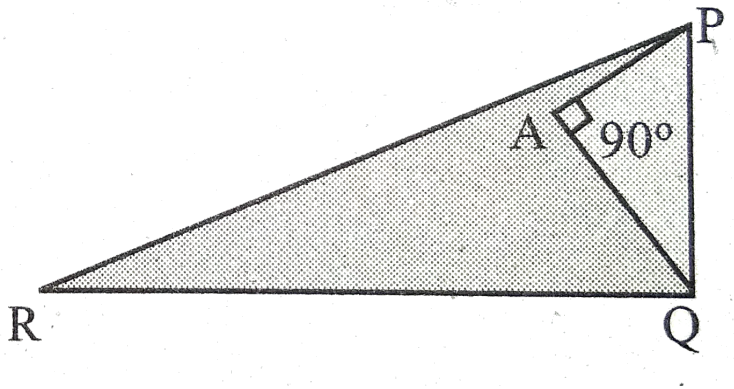
10. In the given figure, PR= 26 cm, QR=24 cm, $PAQ = 90^\circ$, $PA = 6cm$ and QA=8 cm. Find $\angle PQR$



A. 80°

B. 85°

C. 75°

D. 90°

Answer: D

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11. A tangent is perpendicular to the radius at the

A. Centre

B. Point of contact

C. infinity

D. chord

Answer: B

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12. How many tangents can be drawn to the circle from an exterior point ?

A. one

B. two

C. infinite

D. zero

Answer: B

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13. The two tangents from an external points P to a circle with centre at O are PA and PB. If $\angle APB = 70^\circ$ then the value of $\angle AOB$ is

A. 100°

B. 110°

C. 120°

D. 130°

Answer: B

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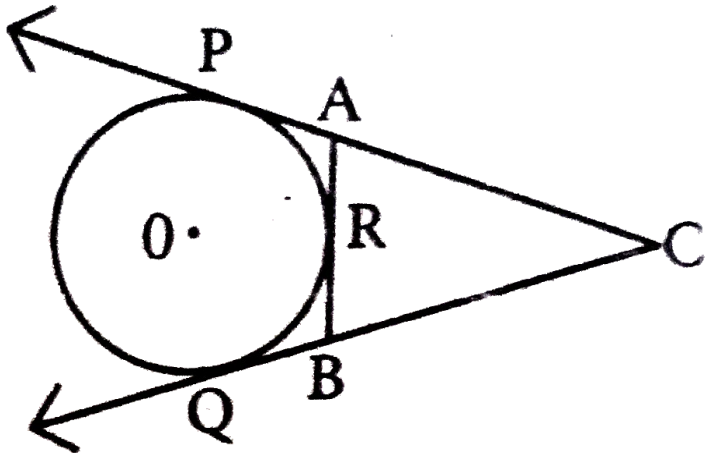
14. In figure CP and CQ are tangents to a circle with centre at 0. ARB is another tangent touching the circle at R. If $CP = 11cm$ and $BC = 7cm$, then the length of BR is ___.



A. 6 cm

B. 5 cm

C. 8 cm

D. 4 cm

Answer: D

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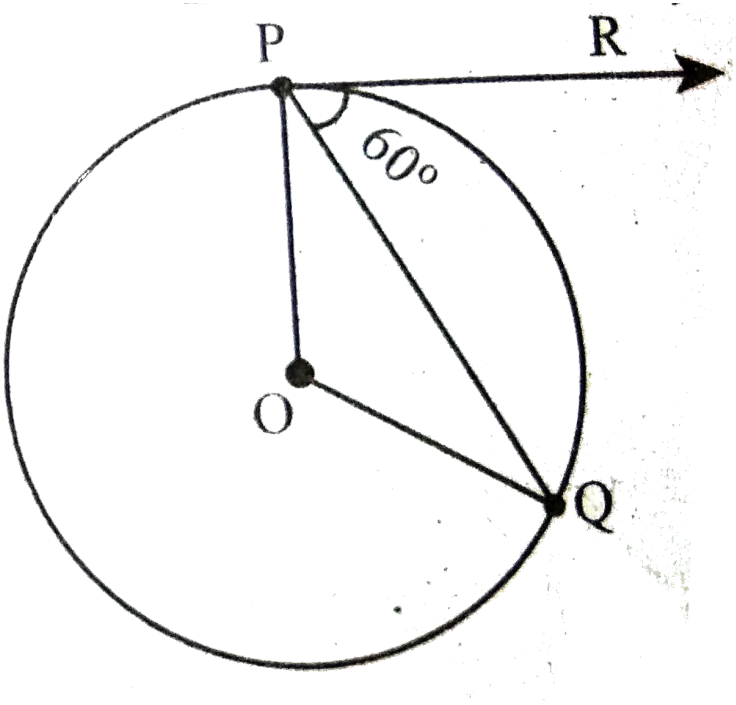
15. In figure if PR is tangent to the circle at P and O is the centre of the circle then $\angle POQ$ is



A. 120°

B. 100°

C. 110°

D. 90°

Answer: A

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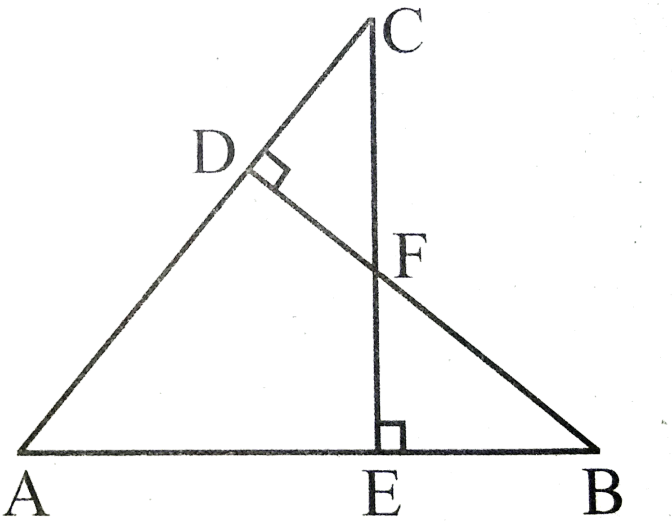
Solution To Unit Exercise

1. In the figure, if $BD \perp AC$ and $CE \perp AB$, prove that

$(i)\Delta AEC \sim \Delta ADB$ $(ii)\dfrac{CA}{AB} = \dfrac{CE}{DB}$



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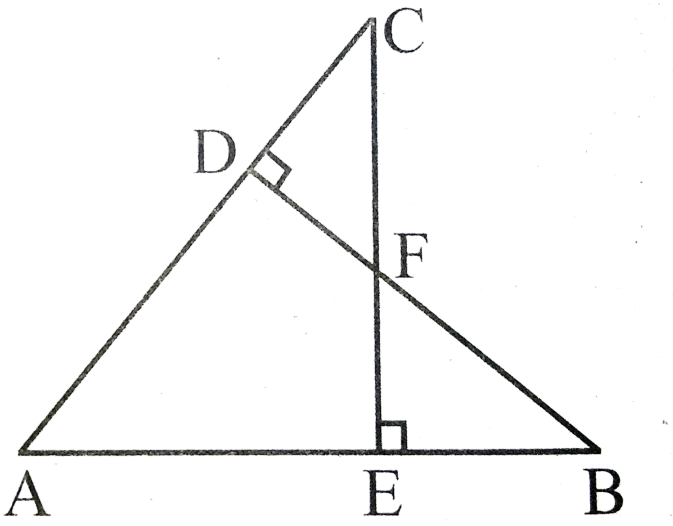
2. In the figure, if $BD \perp AC$ and $CE \perp AB$, prove that

$(i)\Delta AEC \sim \Delta ADB$ $(ii)\frac{CA}{AB} = \frac{CE}{DB}$



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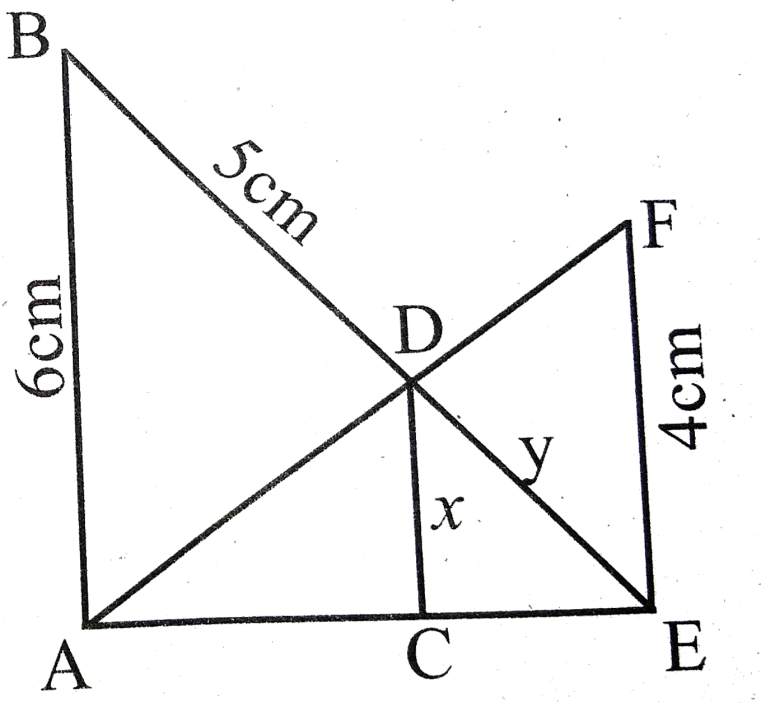
3. In the given figure, AB||CD ||EF. If AB=6 cm, CD= x cm, EF=4 cm, BD=5 cm and DE=y cm. Find x and y .



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4. O is any point inside a triangle ABC. The bisector of $\angle AOB, \angle BOC$ and $\angle COA$ meet the sides AB, BC and CA in point D, E and F respectively.

Show that $AD \times BE \times CF = DB \times EC \times FA$

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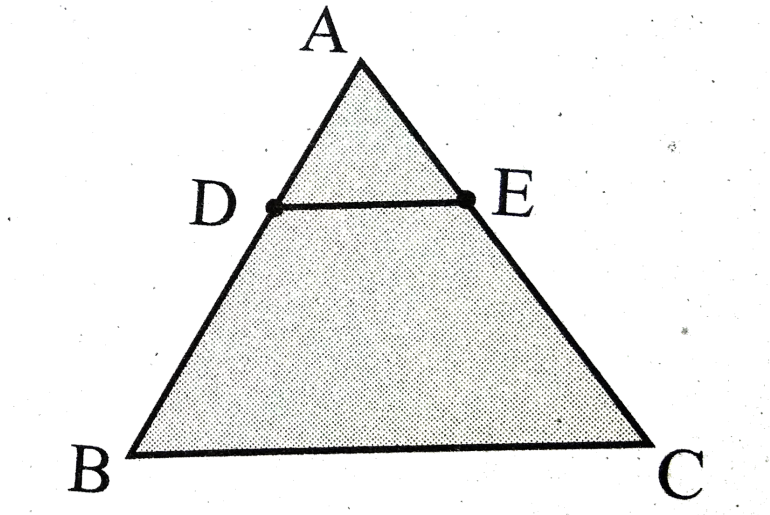
5. In the figure, ABC is a triangle in which AB= AC. Points D and E are points on the side AB and AC respectively such that AD=AE. Show that points B, C, E and D lie on a same circle.



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6. Two trains leave a railway station at the same time. The first train travels due west and the second train due north . The first train travels at a speed of 20 km/ hr and the second train travels at 30 km/ hr. After 2 hours, what is the distance between them ?

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7. D is the mid point of side BC and $AE \perp BC$. If BC=a, AC= b, AB=c, ED=x, AD=p and AE=h, prove that

$(i) b^2 = p^2 + ax + \frac{a^2}{4}$

(ii) $c^2 = p^2 - ax + \frac{a^2}{4}$

$(iii) b^2 + c^2 = 2p^2 + \frac{a^2}{2}$

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8. D is the mid point of side BC and $AE \perp BC$. If BC=a, AC= b, AB=c, ED=x, AD=p and AE=h, prove that

$(i) b^2 = p^2 + ax + \frac{a^2}{4}$

(ii) $c^2 = p^2 - ax + \frac{a^2}{4}$

$(iii) b^2 + c^2 = 2p^2 + \frac{a^2}{2}$

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9. D is the mid point of side BC and $AE \perp BC$. If BC=a, AC= b, AB=c, ED=x, AD=p and AE=h, prove that

$(i) b^2 = p^2 + ax + \frac{a^2}{4}$

(ii) $c^2 = p^2 - ax + \frac{a^2}{4}$

$(iii) b^2 + c^2 = 2p^2 + \frac{a^2}{2}$

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10. A man whose eye-level is 2 m above the ground wishes to find the height of a tree. He places a mirror horizontally on the ground 20 m from the tree and finds that if he stands at a point C which is 4m from the mirror B, he can see the reflection of the top of the tree. How height is the tree ?

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11. An emu which is 8 ft tall standing at the foot of a pillar which is 30 ft height. It walks away from the pillar. The shadow of the emu falls beyond emu. What is the relation between the length of the shadow and the distance from the emu to the pillar ?

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12. Two circles intersect at A and B. From a point P on one of the circles lines PAC and PBD are drawn intersecting the second circle at C and D. Prove that CD is parallel to the tangent at P.

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13. Let ABC be a triangle and D,E,F are points on the respective sides AB, BC, AC (or their extensions). Let AD : DB=5 : 3, BE : EC= 3 : 2 and AC=21. Find the length of the line segment CF.

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Solution To Thinking Corner

1. Are square and a rhombus similar or congruent. Discuss.

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2. Are a rectangle and a parallelogram similar. Discuss.

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3. Write down any five Pythagorean triplets ?

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4. In a right triangle the sum of the other two angles is

____.

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5. Can all the three sides of a right angled triangle be odd numbers ? Why ?

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6. Can we draw two tangents parallel to each other on a circle ?

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7. Can we draw two tangents perpendicular to each other on a circle ?

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Solution To Progress Check

1. All circles are ..... (congruent/similar).

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2. All squares are ..... (similar/congruent).

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3. Two triangles are similar, if their corresponding angles are ..... and their corresponding sides are

.....

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4. All similar triangles are congruent - True/False

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5. All congruent triangles are similar - True/False.

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6. Give two examples of pair of non - similar figures ?

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7. A straight line drawn ____ to a side of a triangle divides the order two sides proportionality.

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8. Basic Proportionality Theorem is also known as .....

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9. Let ΔABC be equilateral. If D is a point on BC and AD is the internal bisector of $\angle A$. Using Angle Bisector

Theorem, $\frac{BD}{DC}$ is .....

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10. The ..... of an angle of a triangle divides the opposite side internally in the ratio of the corresponding sides containing the angle.

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11. If the median AD to the side BC of a ΔABC is also an angle bisector of $\angle A$ then $\frac{AB}{AC}$ is .....

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12. ___ is the longest side of the right angled triangle.

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13. The first theorem in mathematics is .....

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14. If the square of the longest side of a triangle is equal to sums of squares of other two sides, then the triangles is .....

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15. State True or False. Justify them.

Pythagoras Theorem is applicable to all triangles.

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16. State True or False. Justify them.

One side of a right angled triangle must always be a multiple of 4.

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17. A straight line that touches a circle at a common point is called a ___.

Watch Video Solution

18. A chord is a subsection of .....

Watch Video Solution

19. The lengths of the two tangents drawn from ..... point to a circle are equal.

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20. No tangent can be drawn from ..... of the circle.

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21. ..... is a cevian that divides the angle, into two equal halves.

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Solution To Activities

1. Let us try to construct a line segment of length $\sqrt{2}$.

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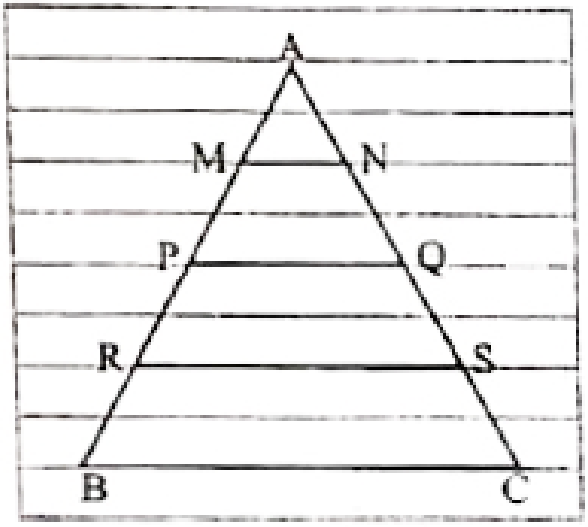
2. Take any ruled paper and draw a triangle ABC with its base on one of the lines. Several parallel lines will cut the triangle ABC. Select any one line among them and name the points where it meets the sides AB and AC as P and Q.



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3. Step 1 : Take a chart and cut it like a triangle as shown in Fig. (a).

Step 2 : Then fold it along the symmetric line AD. Then C and B will be one upon the other.

Step 3 : Similarly fold it along CE, then B and A will be one upon the other.

Step 4 : Similarly fold it along BF, then A and C will be one upon the other.

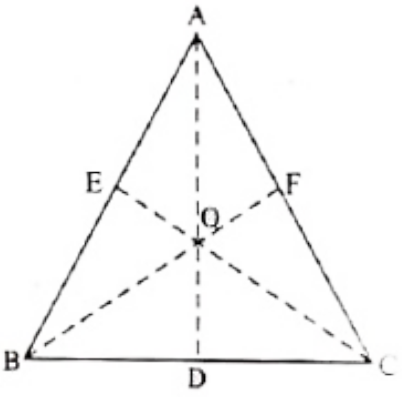

Fig *(a)*

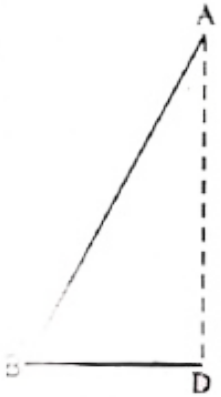

Fig *(b)*

Find AB, AC, BD, DC using a scale. Find $\frac{AB}{AC}, \frac{BD}{DC}$ check

if they are equal ?

In the three cases, the internal bisector of an angle of a triangle divides the opposite side internally in the ratio of the corresponding sides containing the angle. What do you conclude from this activity ?

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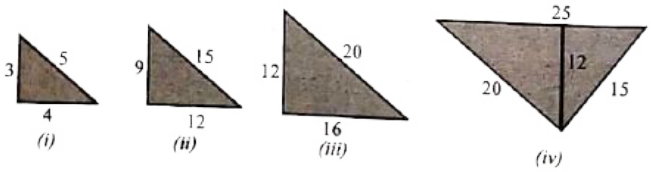
4.



Step 1 : Take a chart paper, cut out a right angled triangle of measurement as given in triangle (i).

Step 2 : Take three more different colour chart papers and cut out three triangles such that sides of triangle

(ii) is three times of the triangle (i), the sides of triangle (iii) is four times of the triangle (i), the sides of triangle (iv) is five times of triangle (i).

Step 3 : Now keeping the common side length the triangle (ii) and (iii) over the triangle (iv) such that the sides of these two triangles [(ii) and (iii))] coincide with the triangle (iv).

Observe the hypotenuse side and write down the equation. What do you conclude ?

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5. Take two consecutive odd numbers.

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6. Write the reciprocals of the above numbers and add them. You will get a number of the form $\frac{p}{q}$.

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7. Add 2 to the denominator of $\frac{p}{q}$ to get q + 2.

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8. Now consider the numbers p, q, q + 2. What relation you get between these three numbers ?

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9. Try for three pairs of consecutive odd numbers and conclude your answer.

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Other Important Objective Type Questions

1. How many tangents can be drawn to the circle from an exterior point ?

A. one

B. two

C. three

D. many

Answer: b

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2. The length of the tangents from an exterior point P to a circle with centre at O and radius 5 cm, is 12 cm, then OP in :

A. 10 cm

B. 19 cm

C. 7 cm

D. 13 cm

Answer: D

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3. Two tangents PA and PB are drawn from an external point P to a circle with centre at O. If $AOB = 105^\circ$ the $A\widehat{P}B$ is :

A. 95°

B. 85°

C. 75°

D. 65°

Answer: C

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4. Two poles 12 cm and 22 cm stand vertically on a plane ground. If the distance between their tops is 26 cm find the distance between their feet :

A. 30 cm

B. 24 cm

C. 12 cm

D. 6 cm

Answer: B

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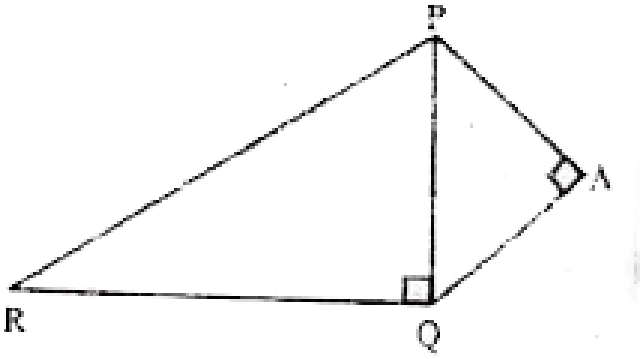
5. In the figure $\left(P\widehat{Q}R\right) = 90^\circ$

PR = 26 cm, QR = 24 cm,

$\left(P\widehat{A}Q\right) = 90^\circ . PA = 6cm$ find QA.



A. 12 cm

B. 8 cm

C. 9 cm

D. 10 cm

Answer: B

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6. The perimeter of two similar triangles ΔPQR and ΔXYZ are 45 cm and 30 cm respectively. If XY = 12 cm the length of PQ is :

A. 14 cm

B. 18 cm

C. 12 cm

D. 15 cm

Answer: B

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7. ΔABC is similar to $\Delta PQR \hat{A} = 65^\circ$, $\hat{B} = 60^\circ$, find $\hat{R}$.

A. 65°

B. 70°

C. 55°

D. 50°

Answer: C

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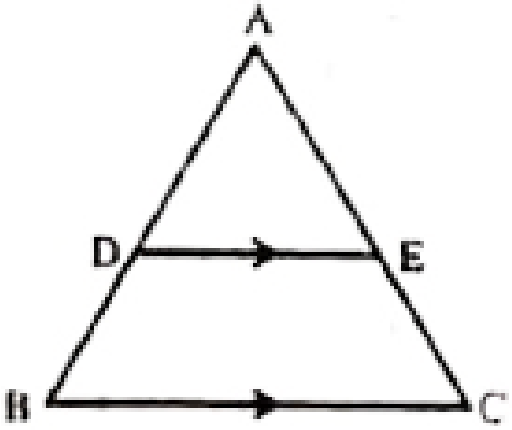
8. In $\Delta ABC, DE \| \| BC \overline{AD} = 5cm, AB = 8cm AE = 10cm$

then EC is :



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9. In $\Delta ABC, \widehat{A} = 90^\circ, AB = 4, AC = 3, D$ is the mid point of BC. Then BD is :

A. 3 cm

B. 1.5 cm

C. 2 cm

D. 2.5 cm

Answer: D

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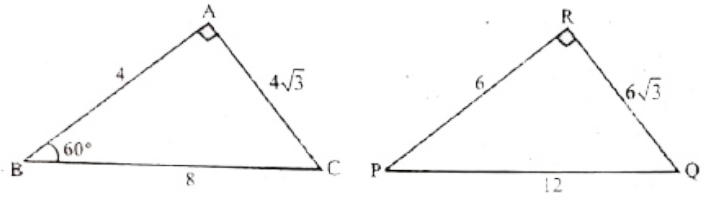
10. 

From the figure given find $\widehat{Q}$ if both are similar.

A. 45°

B. 30°

C. 90°

D. 60°

Answer: B

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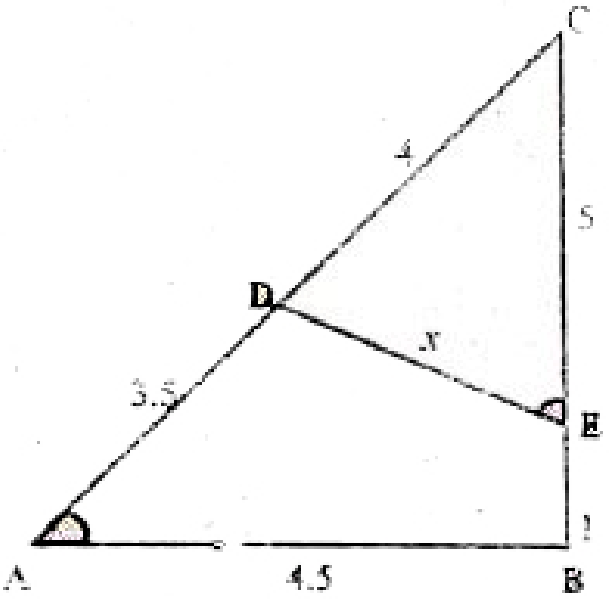
11.



In the figure given $\widehat{A} = C\widehat{E}D$, $\Delta CAB \sim \Delta CED$ find x.

A. 2

B. 2.5

C. 1.5

D. 3

Answer: D

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12. If ΔABC is similar to ΔDEF such that BC = 4cm, EF = 5 cm and are a of $\Delta ABC = 64cm^2$ find are a of ΔDEF.

A. $75cm^2$

B. $72cm^2$

C. $100cm^2$

D. $90cm^2$

Answer: C

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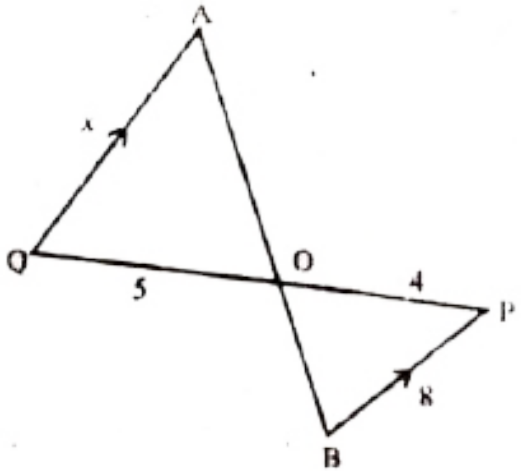
13. From the diagram find x if $AQ \mid\mid BP. QO = 5cm, OP = 4cm, BP = 8cm.$



A. 10 cm

B. 12 cm

C. 8 cm

D. 6 cm

Answer: A

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14. Given that ΔABC is similar ΔPQR. Their perimeters are in the ratio 5 : 6. Is PQ = 12 cm find AB.

A. 7.5 cm

B. 8.5 cm

C. 9 cm

D. 10 cm

Answer: D

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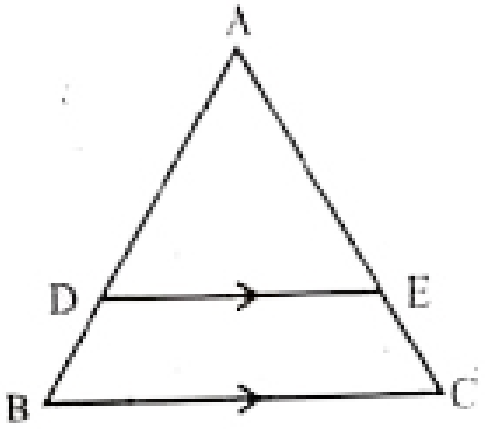
15.



In $\Delta ABCDE \mid \mid BC.\ AD = 3, AB = 5, CE = 1.$

Find AC.

A. 3

B. 2

C. 2.5

D. 1.5

Answer: C

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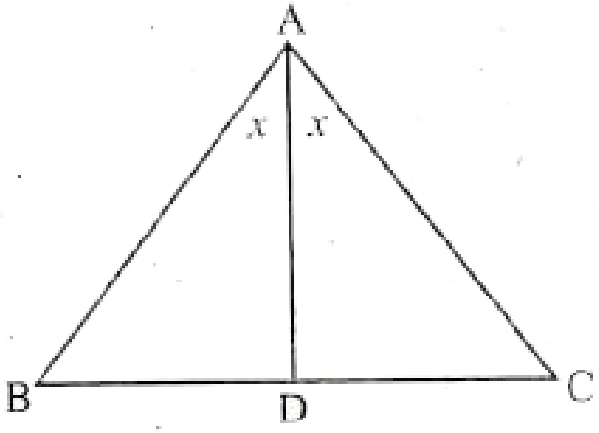
16. In $\Delta ABC, AD$ is the bisector of $\widehat{A}$. $AB = 20cm, AC = 28cm, BC = 12cm$ Find DC.



A. 7.5 cm

B. 7 cm

C. 8 cm

D. 8.5 cm

Answer: B

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17. Find the length of the tangents drawn from C point 10 cm away from a centre of the circle whose radii is 6 cm.

A. 10 cm

B. 8 cm

C. 12 cm

D. 14 cm

Answer: B

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18. Match the following :

18.	..... is the longest side of the right angled triangle	*(a)*	Parallel
19.	Pythagoras theorem is applicable for all triangles	*(b)*	Similar
20.	If two angles of a triangle are equal to two angles of another triangle then the triangles are called.....	*(c)*	Hypotenuse
21.	A straight line drawn ..... to a side of a triangle divides the other two sides proportionality.	*(d)*	Not tone

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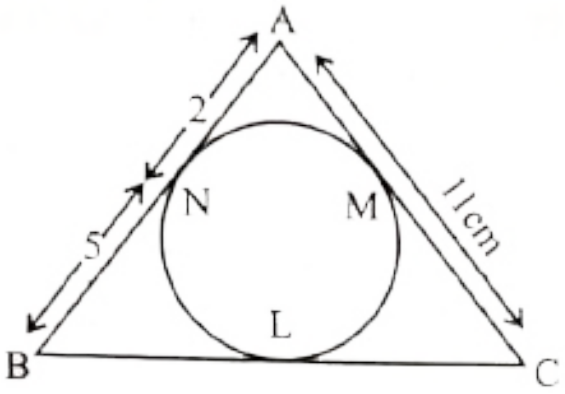
19. ΔABC is circumscribing a circle. Find the length of BC.



A. 11 cm

B. 12 cm

C. 10 cm

D. 14 cm

Answer: D

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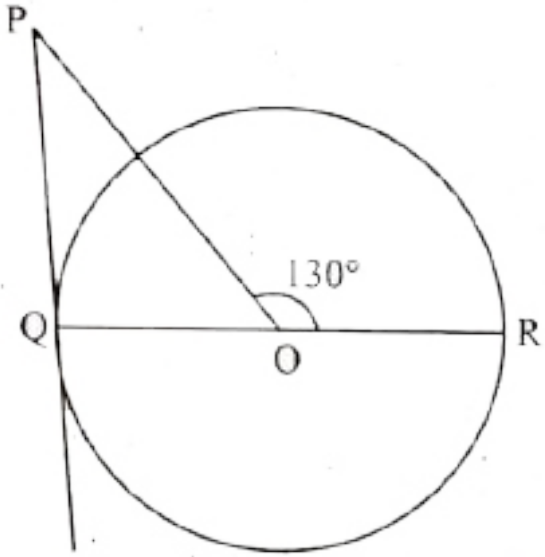
20. O is the centre of the circle QOR is diameter. PQ is tangent to the circle. Given $P\hat{O}R = 130^{\circ}$. Find $O\hat{P}Q$.



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21. If ΔABC is an isosceles triangle with $\hat{C} = 90^\circ$ and $AC = \sqrt{8}$ cm then AB is :

A. 4 cm

B. 4.5 cm

C. $\sqrt{8}$ cm

D. 16 cm

Answer: A

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22. In ΔABC, $AB = AC$ and AD is the angle bisector $\widehat{A}$ meeting BC at D. If BD = 2.5 cm. Find BC.

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