MATHS

BOOKS - CALCUTTA BOOK HOUSE

MATHS (BENGALI ENGLISH)

SIMILARITY

Examples

1. A line parallel to the side BC of ΔABC intersects the sides AB and AC at the points

x and Y respectively. If $AX = 2.4cm$, $AY = 3.2cm$ and $YC = 4.8cm$, then the length of AB is

A. $3.6cm$

B. $6cm$

C. $6.4cm$

D. $7.2cm$

Answer:

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2. The point D and E are situated on the sides AB and AC of ΔABC in such a way that $DE \| BC$ and $AD : DB = 3 : 1$, If $EA = 3.3cm$, then the length of AC is

A. $1.1cm$

B. $4cm$

C. $4.4cm$

D. $5.5cm$

Answer:

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3. In the adjoining figure if $DE \mid\mid BC$, then the value of x is

A. 4

B. 1

C. 3

D. 2

Answer:

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4. In the trapezium $ABCD$, $AB \mid\mid DC$ and the two points P and Q are situated on the sides AD and BC in such a way that $PQ \mid\mid DC$, if $PD = 18cm$, $BQ = 35cm$, $QC = 15cm$, then the length of AD is.

A. $60cm$

B. $30cm$

C. $12cm$

D. $15cm$

Answer:

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5. In the adjoining figure if $DP = 5cm$, $DE = 15cm$, $DQ = 6cm$ and $QF = 18cm$, then

A. $PQ = EF$

B. $PQ \mid\mid EF$

C. $PQ \neq EF$

D. $PQ \not\parallel EF$.

Answer:

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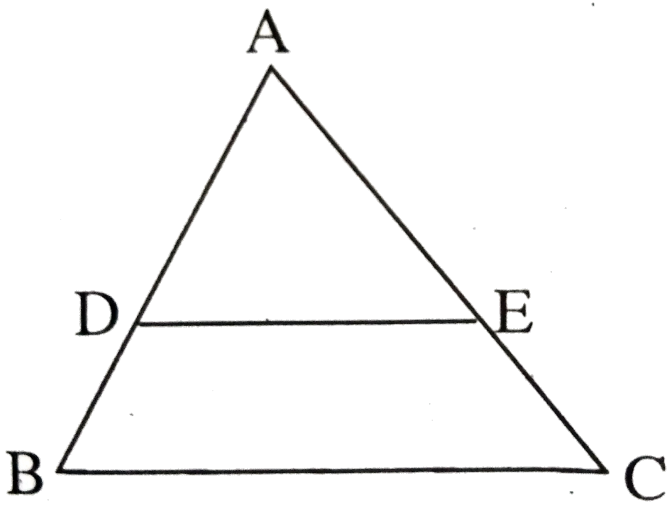
6. Two similar triangles are always congruent.



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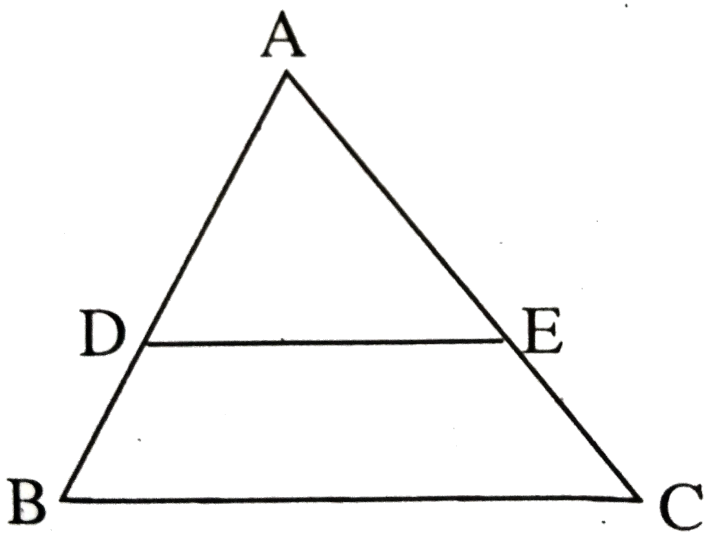
7. In the adjoining figure if $DE \mid\mid BC$, then $\frac{AB}{BD} = \frac{AC}{CE}$.



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8. A straight line parallel to any side of any triangle divides other two sides (or the extended two sides)_____ .

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9. If the bases of two triangles are situated on a same line and the other vertex of the two triangles are common, then the ratio of the areas of two triangles are _____ to the ratio of their bases

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10. The straight line parallel to the parallel sides of a trapezium divides _____ other two sides.

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11. In the adjoining figure, if in ΔABC, $\frac{AD}{DB} = \frac{AE}{EC}$ and if $\angle ADE = \angle ACB$, then write what type of triangle according to side ΔABC is ?

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12. In the adjoining figure $DE \| BC$ and if $AD : BD = 3 : 5$, then find (are of ΔADE) : (area ΔCDE).

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13. In the adjoining figure, $LM \| AB$ and if $AL = (x - 3)$ unit, $AC = 2x$ unit.

$BM = (x - 2)$ unit and $BC = (2x + 3)$ unit, find the value of x.

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14. In the adjoining figure, if in $\Delta ABCD$, $DE||PQ||BC$ and $AD = 3cm$, $DP = xcm$, $PB = 4cm$, $AE = 4cm$, $EQ = 5cm$, $QC = ycm$, then determine the value of x and y.

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15. In the adjoining figure, if $DE \| BC$, $BE \| XC$ and $\frac{AD}{DB} = \frac{2}{1}$, then find the value of $\frac{AX}{XB}$.

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16. All squares are ☐ (congruent/similar)

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17. All circles are ☐ (congruent /similar)

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18. All $\square s$ (equliateral/isoscele) triangles are always similar.

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19. Two quadrilaterals will be similar if their similar angles are $\square$ (equal/proportional) and similar sides are $\square s$(unequal/porportional)

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20. Any two congruent figures are similar

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21. Any two similar figures are always congruent.

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22. The corresponding angles of any two polygonal figures are equal.

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23. The corresponding sides of any two polygonal figures are proportional.

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24. The square and rhombus are always similar.

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25. Write an example of a pair of similar figures.

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26. Construct a pair of dissimilar figures.

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27. A line parallel to the side BC of ΔABC intersects the sides AB and AC at the points

P and Q respectively.

(a) If $PB = AQ$, $AP = 9$ units, $QC = 4$ units, then calculate the length of PB.

(b) The length of PB is twice of AP and the length of QC is 3 units more than the length of AQ, then calculate the length of AC.

(c) If $AP = QC$, the length of AB is 12 units and the length of AQ is 2 units , then calculate the length of CQ.

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28. X and Y are two points on the sides PQ and PR respectively of the ΔPQR.

(a) If $PX = 2$ units, $XQ = 3.5$ units,$YR = 7$ units and $PY = 4.25$ units, then find whether XY and QR are parallel or not.

(b) If $PQ = 8$ units, $YR = 12$ units, $PY = 4$ units and the length of PY is 2 units less than that of XQ, then find whether XY and QR are parallel or not.

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29. With the help of Thales' theorem prove that the line drawn through mid-point of one side of a triangle parallel to another side bisects the third side.

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30. In ΔABC, P is a point on the median AD. Extended BP and CP intersect AC and AB at Q and R respectively. Prove that $RQ \mid\mid BC$.

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31. The two medians BE and CF of ΔABC intersect each other at the point G and if the line segment FE intersects the line segment AG at the point O, then prove that $AO = 3OG$.

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32. Prove that the line segment joining the mid-point of two transverse sides of a trapezium is parallel to its parallel sides.

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33. D is any point on the side BC of ΔABC. P and Q are centroids of ΔABD and ΔADC respectively. Prove that $PQ \mid\mid BC$.

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34. Two triangles ΔPQR and ΔSQR are drawn on the same base QR and on the same side of QR and their areas are equal. If F and

G are two centroids of two triangles, then prove that $FG \parallel QR$.

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35. Prove that two adjacent angles of any parallel side of an isoceles trapezium are equal.

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36. ΔABC and ΔDBC are situated on the same base BC and on the same side of BC. E is any point on the side BC. Two line through the point E and parallel to AB and BD intersects the sides AC and DC at the points F and G respectively. Prove that $AD \mid\mid FG$.

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37. In a right-angled trigangle $\angle A$ is a right-angle and AO is perpendicular to BC at the

point O. Prove that $AO^2 = BO \times CO$.

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38. A straight line drawn through D of the parallelogram $ABCD$ intersects AB and the extended part of CB at the points E and F respectively. Prove that $AD : AE = CF : CD$.

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39. Two chords AB and CD of a circle intersect at a internal point P of the circle. Prove that $AP \times BP = CP \times DP$.

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40. AB is a diameter of a circle. BP is a tangent to the circle at B. A straight line passing through A intersects BP at C and the circle at D. Prove that $BC^2 = AC \times CD$.

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41. In the cyclic quadrilateral $ABCD$, the diagonal BD bisects the diagonal AC. Prove that $AB \times AD = CB \times CD$.

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42. AD is a diameter of the circumcircle of ΔABC. AE is perpendicular to BC. Prove that $AB \times AC = AD \times AE$.

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43. XY is a straight line parallel to the side MT of the parallelogram $MNOT$, which intersects the side MN at X and the side TO at Y. E and F are two points on XY. If ME and TF are extended, they intersect at P and the extended NE and OF intersect each other at Q. Prove that $PQ||MN||TO$.

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44. In ΔPQR, $\angle Q = 2\angle R$, The bisector of $\angle PQR$ intersects PR at the point D. Prove that $PQ \cdot QR = QD.\ PR.$

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45. PQ is a diameter of a circle and AB is such a chord of it that it is perpendicular to PQ. If C be the point of intersection of PQ and AB, then prove that $PC.\ QC = AC.\ BC$

.

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46. $PQRS$ is cyclic quadrilateral. Extended PQ and SR intersect each other at A. Prove that $AP.AQ = AR.AS$.

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47. In ΔABC and ΔDEF if $\frac{AB}{DE} = \frac{BC}{DF} = \frac{AC}{EF}$, then-

A. $\angle B = \angle E$

B. $\angle A = \angle D$

C. $\angle B = \angle D$

D. $\angle A = \angle F$

Answer:

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48. If in ΔDEF and ΔPQR, $\angle D = \angle Q$ and $\angle E = \angle R$, then which one of the followings is not correct?

A. $\frac{EF}{PR} = \frac{DF}{PQ}$

B. $\frac{QR}{PQ} = \frac{EF}{DF}$

C. $\frac{DE}{QR} = \frac{DF}{PQ}$

D. $\frac{EF}{RP} = \frac{DE}{QR}$

Answer:

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49. In ΔABC and ΔDEF, $\angle A = \angle E = 40^\circ$, $AB : ED = AC : EF$ and $\angle F = 65^\circ$, then the value of $\angle B$ is

A. 35°

B. 65°

C. 75°

D. 85°

Answer:

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50. In ΔABC and ΔPQR, if $\frac{AB}{QR} = \frac{BC}{PR} = \frac{CA}{PQ}$, then

A. $\angle A = \angle Q$

B. $\angle A = \angle P$

C. $\angle A = \angle R$

D. $\angle B = \angle Q$

Answer:

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51. In ΔABC, $AB = 9cm$, $BC = 6cm$ and $CA = 7.5cm$. In ΔDEF , the corresponding side of BC is EF, $EF = 8cm$ and if

$\Delta DEF \sim \Delta ABC$, then the perimeter of ΔDEF will be

A. $22.5cm$

B. $25cm$

C. $27cm$

D. $30cm$

Answer:

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52. If the correspondig angles of two quadrillaterals are equal, then they are similar.

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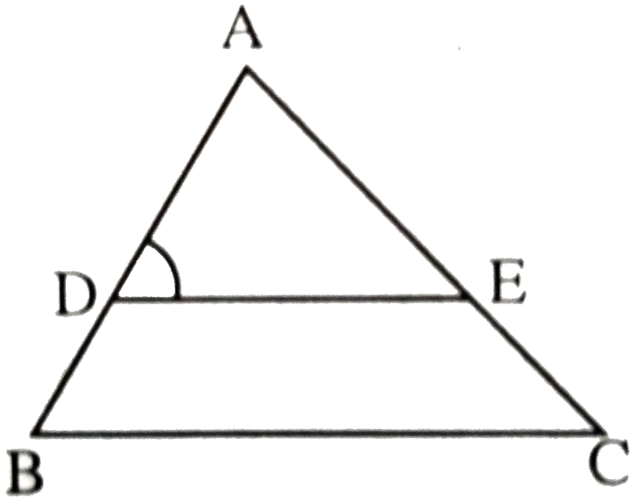
53. In the adjoining figure, If $\angle ADE = \angle ACB$, then $\Delta ADE \sim \Delta ACB$.



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54. In ΔPQR, D is a point on the side QR so that $PD \perp QR$, will it be correct to say that $\Delta PQD \sim \Delta RPD$.? why?

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55. Two triangles are similar if their_____ sides are proportional.

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56. Ther perimeters of ΔABC and ΔDEF are $30cm$ and $18cm$ respectively. $\Delta ABC \sim \Delta DEF$, BC and EF are corresponding sides. If $BC = 9cm$, the $EF = ?$.

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57. In the following figure, if $\angle ACB = \angle BAD$, $AC = 8cm$, $AB = 16cm$ and $AD = 3cm$, then find the length of BD.

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58. In the adjoining figure, $\angle ABC = 90^\circ$ and $BD \perp AC$. If $AB = 5.7cm$, $BD = 3.8cm$, $CD = 5.4cm$, then find the length of BC.

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59. In the figure beside, $\angle ABC = 90^\circ$ and $BD \perp AC$. If $BD = 8cm$ and $AD = 4cm$, then find the length of CD.

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60. In trapezium $ABCD$, $BC \mid\mid AD$ and $AD = 4cm$. The two diagonals AC and BD intersect at the point O in such a way that $\frac{AO}{OC} = \frac{DO}{OB} = \frac{1}{2}$. Find the length of BC.

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61. $\Delta ABC \sim \Delta DEF$ and in ΔABC and ΔDEF, the corresponding sides of AB, BC and CA are DE, EF and DF respectively. If

$\angle A = 47^\circ$ and $\angle E = 83^\circ$, then find the value of $\angle C$.

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62. In ΔABC, $\angle ABC = 90^\circ$ and $BD \perp AC$, if $BD = 8cm$ and $AD = 5cm$, then calculate the length of CD.

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63. ABC is a right angled triangle whose $\angle B$ is right angle and $BD \perp AC$, if $AD = 4cm$ and $CD = 16cm$, then calculate the length of BD and AB.

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64. AB is a diameter of a circle with centre O, P is any point on the circle, the tangent drawn through the point P intersects the two tangents drawn through the points A and B

at the points Q and R respectively. If the radius of the circle be r, then prove that $PQ.PR = r^2$.

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65. Modhurima have drawn a semicircle with a diameter AB. A perpendicular is drawn on AB from any point C on AB which intersects the semicircle at the point D. Prove that CD is a mean proportion of AC and BC.

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66. In right angled triangle ABC, $\angle A$ is a right angle. AD is perpendicular on the hypotenuse BC. Prove that $\frac{\Delta ABC}{\Delta ACD} = \frac{BC^2}{AC^2}$.

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67. AB is a diameter of a circle with centre O. A line drawn through the point A intersects the circle at the point C and the tangent through B at the point D. Prove that $(a) BD^2 = AD.DC$. (b) The area of the

rectangle of formed by AC and AD for any straight line is always equal.

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68. The length of the shadow of a stick of length $6cm$ is $4cm$. At the same time, if the length of the shadow of a tower be 28 metres, then find the height of the tower.

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69. Prove by the theorem of Thales that the third side of a triangle is parallel to the line segment obtained by joining the mid-points of any two sides of the triangle and is half in length of its third side.

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70. Two parallel straight lines intersect three concurrent straight lines at the points A, B, C

and X, Y, Z respectively. Prove that $AB : BC = XY : YZ$.

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71. Kamala have drawn a trapezium $PQRS$ of which $PQ \| SR$. If the diagonals PR and QS intersect each other at O, then prove that $OP : OR = OQ : OS$, If $SR = 2PQ$, then prove that O is a point of trisection of both the diagonals.

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72. $PQRS$ is a parallelogram. If a straight line EF through S intersects PQ and extended RQ at the points X and Y respectively, then prove that $PS : PX = QY : QX = RY : RS$

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73. ΔABC and ΔPQR are two similar acute triangles. Their circumcentres are X and Y respectively. If BC and QR be two

corresponding sides, then prove that $BX : QY = BC : QR$.

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74. The two chords PQ and RS of a circle intersects each other at the point X within the circle. By joining P, S and R, Q prove that ΔPXS and ΔRSQ are similar. From this also prove that $PX : XQ = RX : XS$.

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75. If two chords of a circle intersect internally, then the rectangle of two parts of one is equal to the rectangle of two parts of other.

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76. The two points P and Q are on a straight line, At the points P and Q, PR and QS are perpendicular on the straight line. PS and QR intersect each other at the point O. OT is perpendicular on PQ. Prove that $\frac{1}{OT} = \frac{1}{PR} + \frac{1}{QS}$.

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77. ΔABC is inscribed in a circle, AD is a diameter of the circle and AE is perpendicular on the side BC, which intersects the side BC at the point E. Prove that ΔAEB and ΔACD are similar. From this also prove that $AB \times AC = AE \times AD$.

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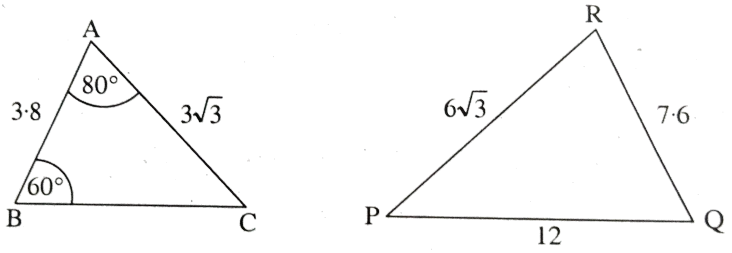
Exercise 5 1

1. In the following figure , $\angle P =$



A. 30°

B. 40°

C. 50°

D. 60°

Answer:

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2. A girl of height $90cm$ is walking away from the foot of a lamp-post at a speed of $1.2m/\sec$. If the lamp is at a height of $3.6m$ from the ground, then the length of the shadow of the girl after 4 sec is

A. $4.8m$

B. $2.4m$

C. $1.6m$

D. $0.8m$

Answer:

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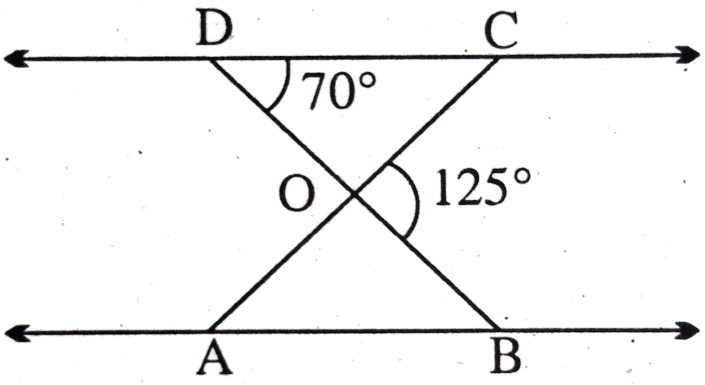
3. In the figure beside , $\Delta ODC \sim \Delta OBA$, $\angle BOC = 125^\circ$ and $\angle CDO = 70^\circ$ then $\angle DOC =$



A. 55°

B. 60°

C. 65°

D. 70°

Answer:

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4. In ΔPQR the straight line parallel to QR intersects the sides PQ and PR at the points E and F respectively. If $EQ = 2PE$ and $FR = PF + 3$, then the length of PR is

A. 1 unit

B. 3 units

C. 6 units

D. 9 units

Answer:

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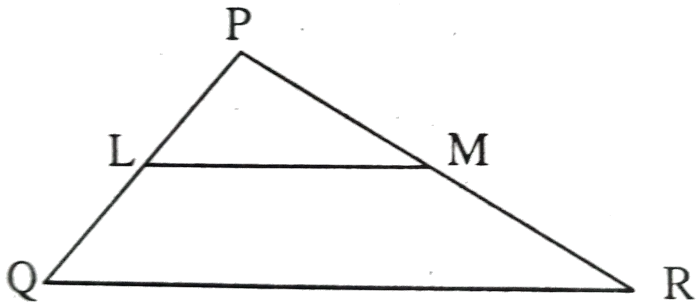
5. In the ΔPQR, a straight line parallel to QR intersects the sides PQ and PR at the points L and M. If $PL = n$. PL and

$LQ = (p+1)LQ$, then $n - p =$



A. 0

B. 1

C. 2

D. 3

Answer:

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6. In ΔPQR, $PQ = 24cm$, $PR = 32cm$ and PS is the bisector of $\angle QPR$, where $QS = 8cm$. Then the length of $SR =$

A. $12cm$

B. $14cm$

C. $16cm$

D. $18cm$

Answer:

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7. In ΔABC, $\frac{AB}{AC} = \frac{BD}{DC}$. If $\angle B = 70^\circ$ and $\angle C = 50^\circ$, then $\angle BAD =$

A. 30°

B. 45°

C. 60°

D. 90°

Answer:

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8. In ΔABC, D and E are two such points on the sides AB and AC respectively that $DE \mid\mid BC$. If $AD = x + 3$, $BD = 3x + 19$, $AE = x$ and $CE = 3x + 4$, then the value of $x =$

A. 2

B. 3

C. 4

D. 5

Answer:

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9. In ΔABC the straight line DE parallel to BC intersects the other two sides at the points D and E respectively. If $AB = 4.2cm$, $AC = 3.6cm$ and $AD = 6.3cm$ and $AD = 6.3cm$, then $AE =$

A. $5.04cm$

B. $5.41cm$

C. $5.44cm$

D. $5.4cm$

Answer:

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10. In ΔABC, a straight line parallel to BC intersects the sides AB and AC at the points L and M. If the length of AM be thrice of the length of AL, then $BL : CM =$

A. $1:2$

B. $1:3$

C. $2:3$

D. $3:1$

Answer:

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11. The straight line parallel to the side BC of ΔABC intersects the sides AB and AC at

the points D and E respectively. Then $\frac{AB}{BD} = \frac{AC}{CE}$.

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12. If a straight line divides any two sides (or their extended sides) of a triangle in any ratio, it will be parallel to third side.

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13. If two or more than two triangles be equiangular and the ratios of their corresponding sides be equal, then the triangles are called _____ triangles.

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14. If the shapes and sizes of two or more than two triangles be the same, then they are called _____ triangles.

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15. A straight line parallel to any side of any triangle divides other two sides (or the extended two sides)_____ .

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16. $PQRS$ is a trapezium of which $PS \| QR$. Its two diagonals PR and QS intersects each other at the point O. If $PO = 3, RO = x - 3,$ SO=x-2 and OQ=3x-13`, then find the value of 'x'

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17. In ΔABC a straight line parallel to BC intersects the sides AB and AC at the points P and Q respectively. If $AP = QC$, $AB = 12cm$, $AQ = 2cm$, then find the value of CQ.

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18. The line segments AB and PQ intersect each other at the point C. AP and BQ are

perpendiculars on AB respectively. If $CA = 20cm$, $CB = 8cm$ and $AP = 10cm$, then find the value of BQ.

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19. In ΔPQR, $\angle QPR = 90^\circ$ and $PD \perp QR$. If $PR = 8cm$ and $PQ = 6cm$, then find the value of DQ.

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20. In trapezium $PQRS$, $PQ \| SR$. If $PQ = 6cm$, $SR = 9cm$ and $QS = 15cm$ and the point of intersection of the diagonals be C, then find the length of CQ.

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21. In trapezium $PQRS$, $PQ \| SR$. If $PQ = 4$ units , $SR = 6$units . If the diagonals of the trapezium intersect each other at the points C, then find the ratio $CQ : CS$.

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22. In ΔPQR, A and B are two such points on PQ and PR respectively that $AB \mid\mid QR$. If $PA = 1.7cm$, $PQ = 6.8cm$ and $PR = 9cm$, then find the value of PB.

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23. In the right-angled triangle ABC, $\angle B = 90^\circ$ and the points D and E are on the

sides AC and BC such that $DE \| AB$. If $AB = 9cm$, $DE = 3cm$ and $AC = 24cm$, then find the value of AD.

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24. PS is perpendicular on the hypotenuse QR of the right-angled triangle PQR. If $QR = 16cm$ and $QS = 9cm$, then find the length of PQ.

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25. In ΔPQR, D and E are two such points on the sides PQ and PR that $DE \| QR$. If $\frac{PD}{QD} = \frac{4}{13}$ and $PR = 20.4cm$, then find the length of PE.

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26. In ΔABC, the bisector of $\angle ABC$ intersects AC at the point P. Prove that $CB : BA = CP : PA$.

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27. In trapezium $ABCD$, AB and DC are parallel. A straight line parallel to AB intersects AD and BC at the points E and F respectively. Prove that $DE : EA = CF : FB$.

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28. D is any point on the side BC of the ΔABC. P and Q are the centroids of ΔABD and ΔACD. Prove that $PQ \parallel BC$.

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29. Prove that the line segment obtianed by joining the midpoints of two transversed sides of a trapezium is parallel to the parallel sides of the trapezium.

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30. In ΔABC, the bisector AD of $\angle BAC$ intersects BC at D. Prove that the ΔABC is an isoceles triangle.

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31. Write the following sentences true or false:

Square and rhombuses are always identical.

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32. $AB = 6.4cm$. It is divided internally and externally at the points P and Q respectively in the ratio $5:3$. Prove that $\frac{2}{AB} = \frac{1}{AP} + \frac{1}{AQ}$.

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Exercise 5 2

1. In ΔPQR and ΔDEF, $\frac{PQ}{DE} = \frac{QR}{EF} = \frac{RP}{FD}$. Then which one of the following is correct?

A. $\angle P = \angle E$

B. $\angle P = \angle D$

C. $\angle Q = \angle F$

D. $\angle P = \angle R$

Answer:

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2. In ΔABC and ΔDEF if $\angle B = \angle E$ and $\angle C = \angle F$, then which of the following in not correct?

A. $\frac{AB}{DE} = \frac{AC}{DF}$

B. $\frac{BC}{EF} = \frac{AC}{DF}$

C. $\frac{AB}{EF} = \frac{AC}{DF}$

D. $\frac{AC}{DF} = \frac{BC}{EF}$

Answer:

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3. In ΔPQR and $\Delta DEF, \angle Q = \angle E = 42^\circ$, $\frac{PQ}{DE} = \frac{QR}{EF}$ and if $\angle F = 60^\circ$, then the value of $\angle P$ is

A. 78°

B. 48°

C. 68°

D. 90°

Answer:

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4. In the right-angled triangles ΔPQR and ΔDEF, $\angle Q = \angle E =$ right angle. If $PQ = (\sqrt{2}+1)cm.$ $QR = (\sqrt{2}-1)cm,$ $DE = (2\sqrt{2}+1)cm$ and $EF = (2\sqrt{2}-1)cm,$ then ΔPQR and ΔDEF are

A. congruent

B. similar

C. of equal areas

D. not similar

Answer:

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5. ΔABC and ΔBDE are two equilateral triangles. If D is the mid-point of BC, then the ratio of the areas of ΔABC and ΔBDE is

A. $2:1$

B. $1:2$

C. $1:4$

D. $4:1$

Answer:

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6. If the ratio of the sides of two similar triangles be $4:9$, then ratio of areas will be

A. $16:81$

B. $2:3$

C. $4:9$

D. $81:16$

Answer:

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7. $\Delta PQR \sim \Delta DEF$ and their areas are 49 sq-cm and 121 sq-cm respectively. If $DE = 44cm$, then the value of PQ is

A. $23cm$

B. $30cm$

C. $32cm$

D. $28cm$

Answer:

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8. Write the following sentences true or false:

Any two identical image are congruent.

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9. C and B are two points on the straight line XY, P is an external point of XY. If $XC = 6cm$, $YB = 9cm$ and area of $\Delta PXC = 6.6$ sq-cm, then the area of ΔPYB is

A. 8.8 sq-cm

B. 9.9 sq-cm

C. 10.10 sq-cm

D. 11.11 sq-cm

Answer:

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10. In ΔPQR, a straight line parallel to QR intersects PQ and PR at the points D and E respectively. If $PD = 2.4cm$, $PE = 3.2cm$ and $ER = 4.\ 8cm$, then the length of PQ is

A. $6.6cm$

B. $6.4cm$

C. $6.2cm$

D. $6.0cm$

Answer:

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11. Fill the blank :All _____(equilateral/isosceles) triangle are always identical.

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12. state true or false; Two equiangular triangles are always congruent.

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13. state true or false; If the two sides of two triangles are in proportion, then they are similar.

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14. If the areas of two similar triangles be equal, they are_____ .

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15. The ratio of the areas of two similar triangels is equal to the _____of their corresponding sides.

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16. Prove that the perimeters of two similar triangles are proportional to any two corresponding sides of them.

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17. AD is a perpendiuclar drawn from the vertex A of the right-angled triangle ABC on its side BC. If $AB : AC = 5 : 4$, then find the value of the ratio $BD : DC$.

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18. Fill the blank :All circles are_____(uniform/identical)

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19. Fill the blank :All square are_____(uniform/identical)

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20. Write the following sentences true or false:

Any two identical figure are similar.

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21. The diagonals of the quadrilateral $ABCD$ intersect each other at O in such a way that $\frac{AO}{BO} = \frac{CO}{DO}$. Prove that $ABCD$ is a trapezium.

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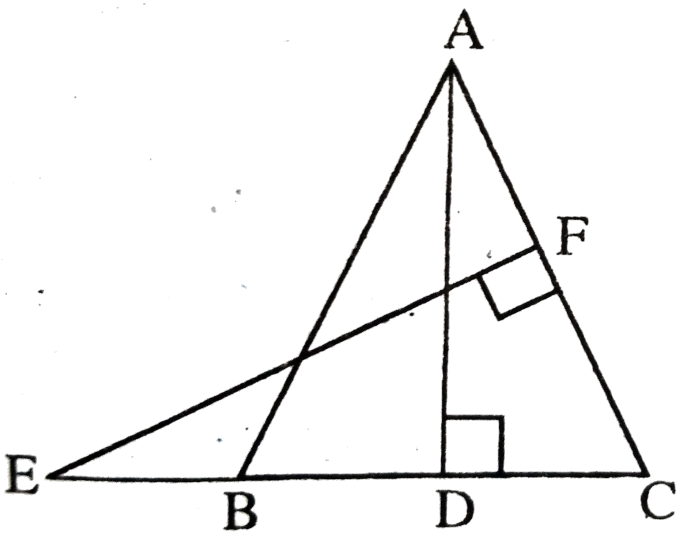
22. In the figure beside is a point on the extended part of $CB.\Delta ABC$ is an isosceles triangle of which $AB = AC$. IF $AD \perp BC$ and $EF \perp AC$, then prove that $\Delta ABD \sim \Delta ECF$.



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23. D is a point on the side BC of ΔABC. If $\angle ADC = \angle BAC$, then prove that $CA^2 = CB \times CD$.

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24. If AD and PM be two medians of ΔABC and ΔPQR respectively, where $\Delta ABC \sim \Delta PQR$, then prove that $\frac{AB}{PQ} = \frac{AD}{PM}$.

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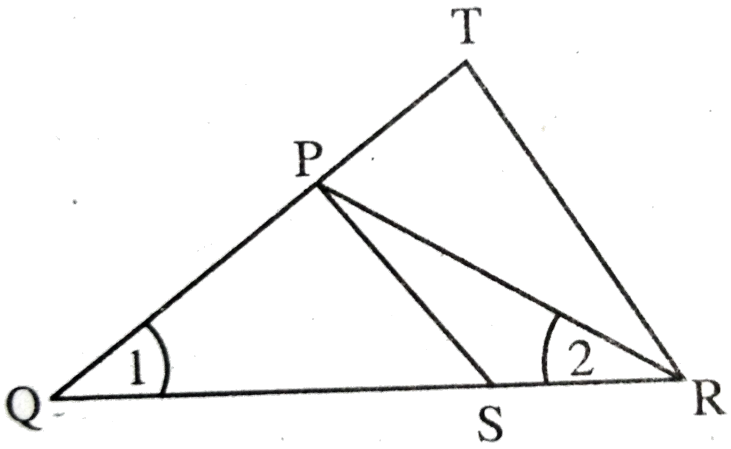
25. In the figure beside , $\frac{QR}{QS} = \frac{QT}{PR}$ and $\angle 1 = \angle 2$. Prove that $\Delta PQS \sim \Delta TQR$.



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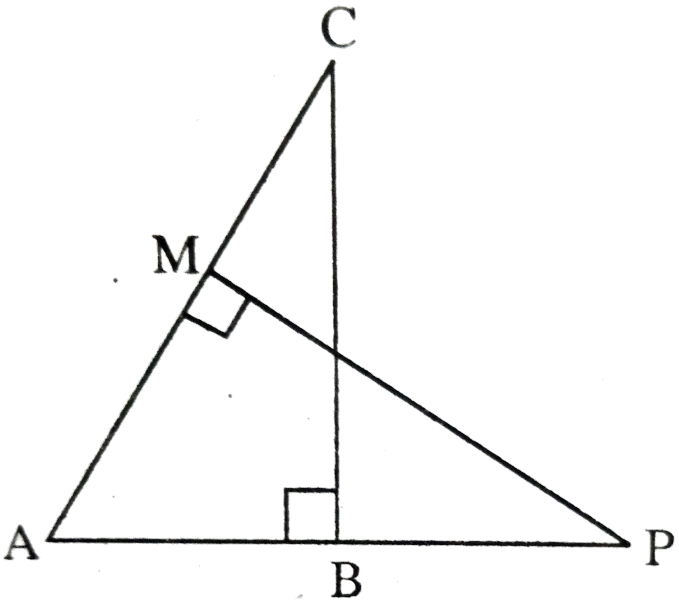
26. In the adjoining figure , $\angle B$ and $\angle M$ of the right angled triangles ΔABC and ΔAMP are right angles. Prove that (a) $\Delta ABC \sim \Delta AMP, (b)$ $\frac{CA}{PA} = \frac{BC}{MP}$.



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27. CD and GH are the bisectors of $\angle ACB$ and $\angle EGF$ respectively. If D lies on AB of ΔABC and H lies on EF of ΔEFG and if $\Delta ABC \sim \Delta EFG$, then prove that (a) $\frac{CD}{GH} = \frac{AC}{FG}$, $(b) \Delta DCB \sim \Delta HGE$, $(c) \Delta DCA \sim \Delta HGF$

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