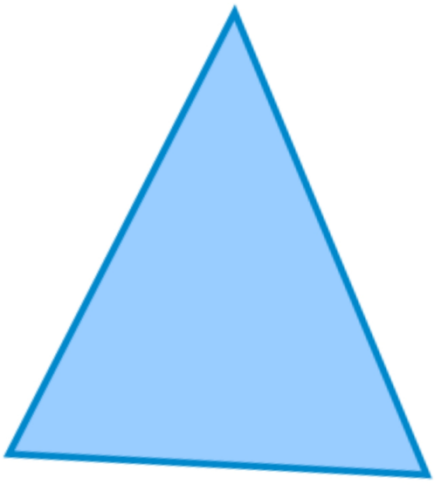
# MATHEMATICS - 10TH

## IMPORTANT MCQ'S – MATHS (10TH GRADE)



# TRIANGLES

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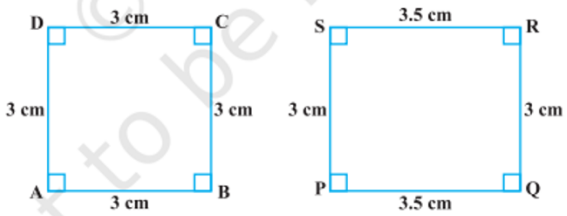
Material Curated by
Er. Sonal Agrawal Sir
Ex. Scientist , BARC Mumbai

# 10th - Maths

| SN | | Marks |
|---|---|---|
| 1 | I - All congruent figures are similar.<br>II - All similar figures are congruent.<br>Which of these is correct ?<br>( a) (i) only ( b) (ii) only<br>( c) Both (i) and (ii) ( d) All of the above | 1 |
| 2 |  <br>Are the two fig shown above similar ?<br>( a) YES ( b) NO | 1 |
| 3 | All squares are _____.<br>( a) Congruent ( b) Non-congruent<br>( c) Similar ( d) Not similar | 1 |
| 4 | All _____ triangles are similar.<br>( a) Equilateral ( b) Isosceles<br>( c) Scalene ( d) None of the above | 1 |
| 5 | Any two rectangles are similar.<br>( a) TRUE ( b) FALSE | 1 |
| 6 | Fill in the blank using the correct word given in bracket: All squares are _____<br>( a) SIMILIAR ( b) CONGRUENT | 1 |
| 7 | Complete the following statement: Two figures are called similar when _____?<br>( a) They have same shape. ( b) They have same size. | 1 |

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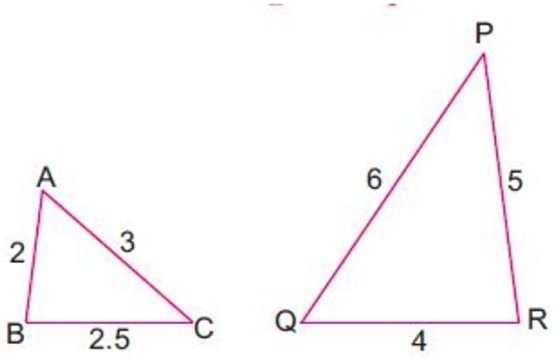
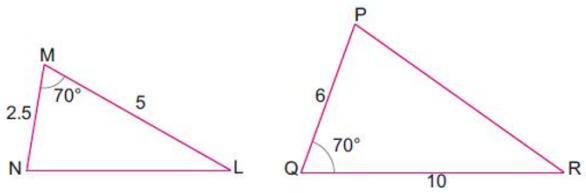
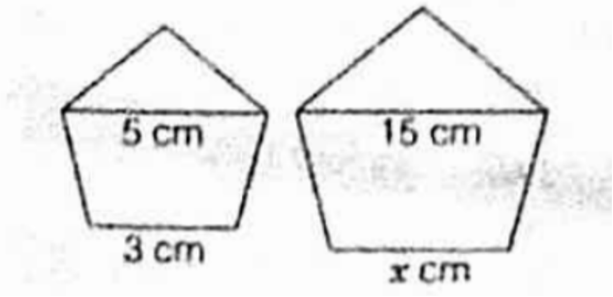
|---|---|---|
| | ( c) They have both same shape and size. ( d) They have neither same shape nor same size. | |
| 8 |  <br>State True or False: In the above diagram, two triangles are similar.<br>( a) TRUE ( b) FALSE | 1 |
| 9 |  <br>State True or False: In the above diagram, two triangles are similar.<br>( a) TRUE ( b) FALSE | 1 |
| 10 | State True or False: If in two right triangles, one of the acute angles of one triangle is equal to an acute angle of the other triangle, Then the two triangles will be similar.<br>( a) TRUE ( b) FALSE | 1 |
| 11 | State True or False: $\triangle ABC \sim \triangle PRQ$ , $\angle B = \angle Q$.<br>( a) TRUE ( b) FALSE | 1 |
| 12 | State True or False: If $\triangle ABC \sim \triangle DEF$, then we say AB=DE?<br>( a) TRUE ( b) FALSE | 1 |
| | | |

| | | |
|---|---|---|
| 13 | State True or False: It is given that $\triangle LNM \sim \triangle YZX$. Then $\frac{XY}{YZ} = \frac{LM}{NL}$.<br>( a) TRUE ( b) FALSE | 1 |
| 14 | State True or False: It is given that $\triangle LNM \sim \triangle YZX$. Then $\frac{YX}{XZ} = \frac{LM}{NL}$.<br>( a) TRUE ( b) FALSE | 1 |
| 15 | State True or False: It is given that $\triangle LNM \sim \triangle YZX$. Then $\angle M = \angle X$.<br>( a) TRUE ( b) FALSE | 1 |
| 16 | State Whether True or False: All congruent figures need not be similar.<br>( a) TRUE ( b) FALSE | 1 |
| 17 | State Whether True or False: A circle of radius 3 cm and a square of side 3 cm are similar figures.<br>( a) TRUE ( b) FALSE | 1 |
| 18 | State Whether True or False: If $\triangle ABC \sim \triangle XYZ$, then $\frac{AB}{XY} = \frac{AC}{XZ}$.<br>( a) TRUE ( b) FALSE | 1 |
| 19 | State Whether True or False: If $\triangle DEF \sim \triangle QRP$, then $\angle D = \angle Q$ and $\angle E = \angle P$.<br>( a) TRUE ( b) FALSE | 1 |
| 20 | All similar figures need not be _____.<br>( a) Congruent ( b) Different<br>( c) Same Angle ( d) None of these | 1 |
| 21 | Two polygons of the same number of sides are similar, if their corresponding angles are _____ and their corresponding sides are _____ .<br>( a) Not equal, proportional ( b) Not equal, Not proportional<br>( c) Equal, proportional ( d) Equal, Not proportional | 1 |
| 22 | If in two triangles DEF and XYZ, $\frac{DF}{YZ} = \frac{ED}{XY} = \frac{EF}{XZ}$, then | 2 |

| | | |
|---|---|---|
| | (a) $\triangle DEF \sim \triangle XYZ$ (b) $\triangle DFE \sim \triangle XYZ$<br>(c) $\triangle FED \sim \triangle ZXY$ (d) $\triangle EFD \sim \triangle XYZ$ | |
| 23 | State True or False: If $\triangle ABC \sim \triangle FED$. Then $\frac{AB}{FE} = \frac{BC}{ED} = \frac{AC}{FD}$.<br>(a) TRUE (b) FALSE | 1 |
| 24 | State True or False: If one polygon is similar to another polygon and the second polygon is similar to third polygon, then the first polygon is similar to the third polygon.<br>(a) TRUE (b) FALSE | 1 |
| 25 |  <br>The given shapes are mathematically similar. Calculate the unknown side.<br>(a) 5 cm (b) 6 cm<br>(c) 9 cm (d) 10 cm | 1 |
| 26 | If $\triangle$ABC $\sim$ $\triangle$PQR, AB = 6.5 cm, PQ = 10.4 cm and perimeter of $\triangle$ABC = 60 cm, find the perimeter of $\triangle$PQR.<br>(a) 75 cm (b) 85 cm<br>(c) 94 cm (d) 96 cm | 2 |
| 27 | It is given that $\triangle$ABC $\sim$ $\triangle$EDF such that AB = 5 cm, AC = 7 cm, DF = 15 cm and DE = 12 cm. Find the length BC.<br>(a) 6 cm (b) 6.25 cm<br>(c) 7 cm (d) 7.45 cm | 2 |
| 28 | | 1 |

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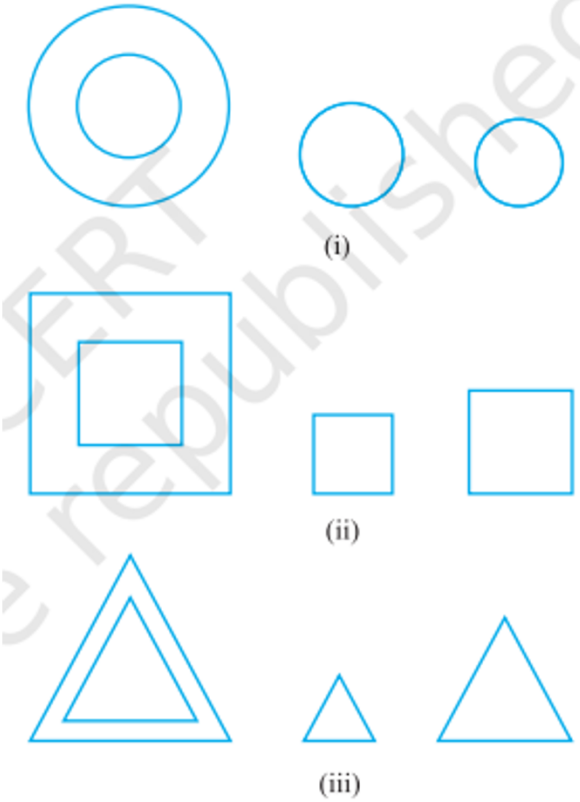
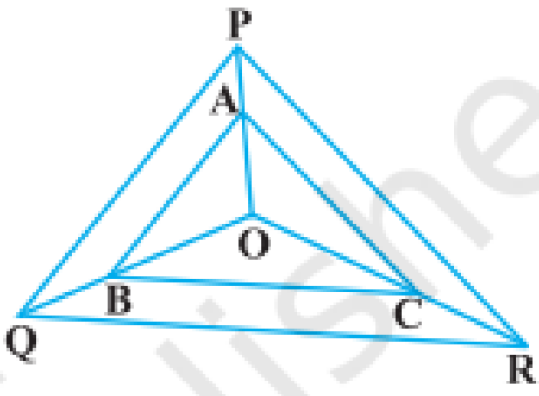



Which of these shown in the above fig contain similar figures ?

( a) (i) only ( b) (i) and (ii)

( c) (ii) and (iii) ( d) All of the above

29



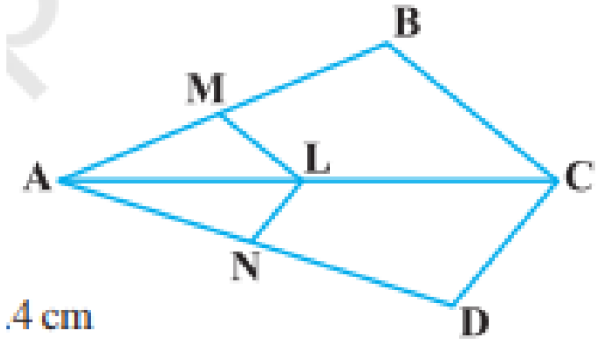
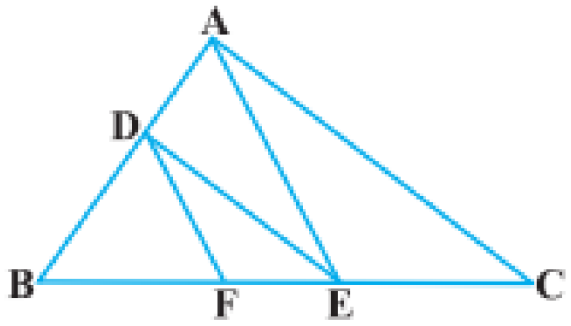

In the above fig, A, B and C are points on OP, OQ and OR respectively such that AB || PQ and AC || PR. Is BC || QR ?

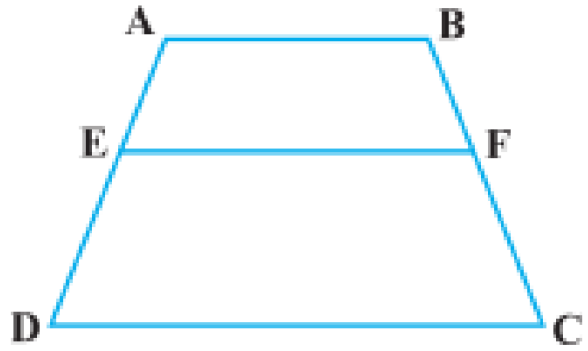
( a) NO ( b) YES

3

30

3

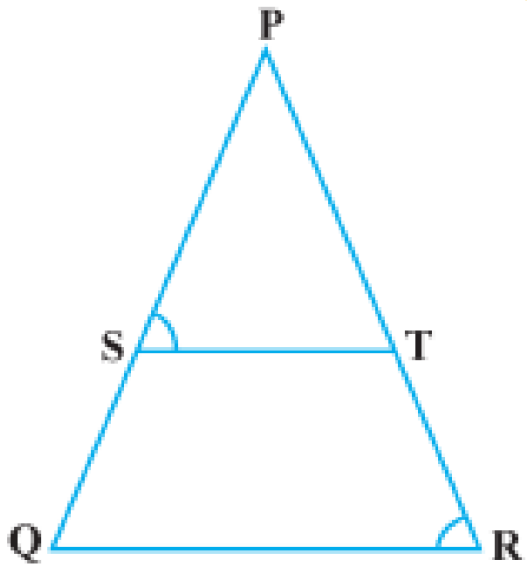
| | | |
|---|---|---|
| |  <br>In the above fig, if LM ll CB and LN ll CD, Is $\frac{AM}{AB} = \frac{AN}{AD}$ ?<br>( a) YES ( b) NO | |
| 31 |  <br>In the above fig, DE ll AC and DF ll AE. Is $\frac{BF}{FE} = \frac{BE}{EC}$ ?<br>( a) YES ( b) NO | 3 |
| 32 | If in $\triangle$ABC and $\triangle$PQR, $\frac{AB}{QR} = \frac{BC}{PR} = \frac{CA}{PQ}$ then ___<br>( a) $\triangle PQR \sim \Delta CAB$ ( b) $\triangle PQR \sim \Delta ABC$<br>( c) $\triangle CBA \sim \Delta PQR$ ( d) $\triangle BCA \sim \Delta PQR$ | 3 |
| 33 | | 2 |




ABCD is a trapezium as shown in the above fig with AB II DC. E and F are points on non-parallel sides AD and BC respectively such that EF is parallel to AB. Is $\frac{AE}{BF} = \frac{FC}{ED}$ ?

( a) YES ( b) NO

34 2

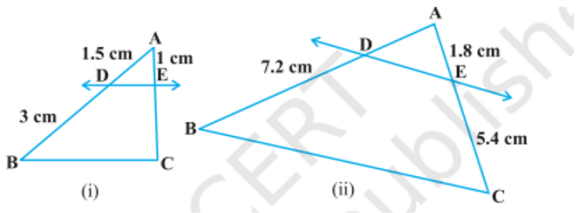



In the above fig, $\frac{PS}{SQ} = \frac{PT}{TR}$ and ∠PST = ∠PRQ. PQR is a/an _____ triangle.

( a) Equilateral ( b) Isosceles

( c) Scalene ( d) None of the above

35 2

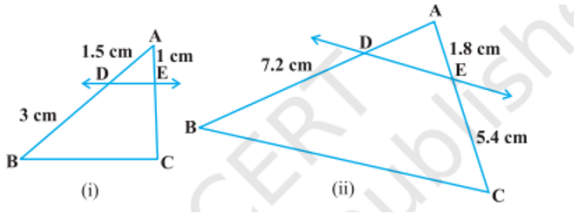



In the above fig, (i) and (ii), DE II BC. Find EC in (i).

( a) 2 cm ( b) 3.5 cm

( c) 3 cm ( d) 4 cm

36 2

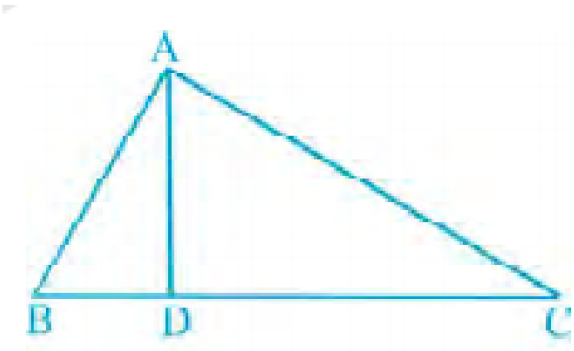



In the above fig (i) and (ii), DE II BC. Find AD in (ii).

( a) 0.8 cm ( b) 1.6 cm

( c) 2.4 cm ( d) 3 cm

37 2




In the above given figure,∠D = 90° and AD is perpendicular to BC. Then,

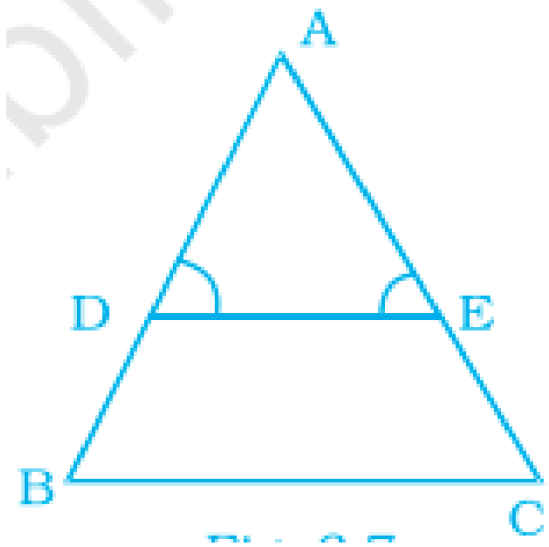
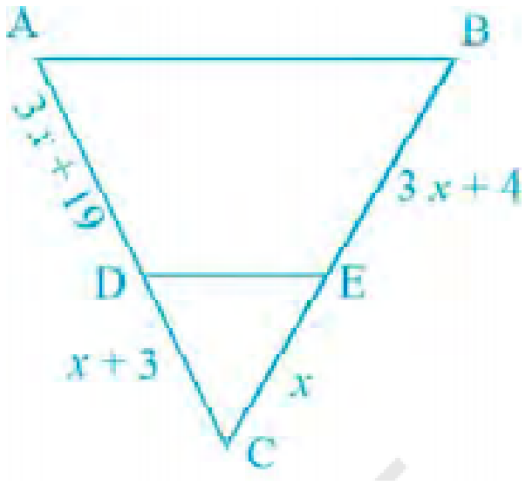
( a) $BD.CD = BC^2$ ( b) $AB.AC = BC^2$

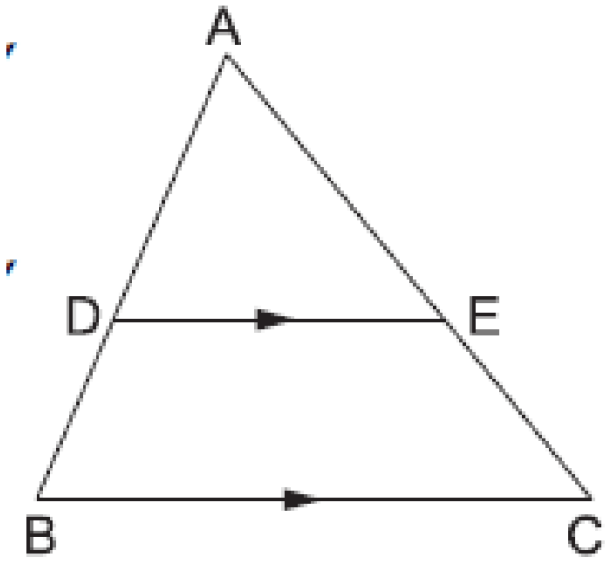
( c) $BD.CD = AD^2$ ( d) $AB.AC = AD^2$

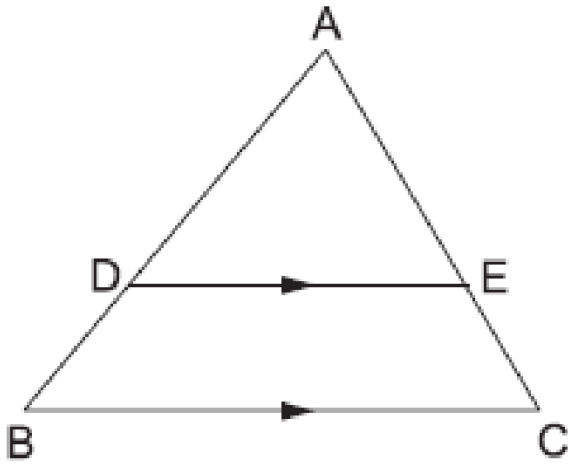
38 It is given that ΔABC ~ ΔDFE, ∠A =30°, ∠C = 50°, AB = 5 cm, AC = 8 cm and DF= 7.5 cm. Then, which of the following is true? 2

( a) DE = 12 cm, ∠F = 50° ( b) DE = 12 cm, ∠F = 100°

( c) EF = 12 cm, ∠D = 100° ( d) EF = 12 cm, ∠D = 30°

| | | |
|---|---|---|
| 39 | State True or False: D is a point on side QR of $\Delta PQR$ such that PD is perpendicular to QR. Then it is correct to say that $\Delta PQD \sim \Delta RPD$ ?<br>( a) TRUE ( b) FALSE | 1 |
| 40 |  <br>In the given figure above, $\angle D = \angle E$ and $\frac{AD}{DB} = \frac{AE}{EC}$. Then BAC is an isosceles triangle.<br>( a) TRUE ( b) FALSE | 2 |
| 41 |  <br>From the above given figure, find the value of x for which DE is parallel of AB.<br>( a) 1 ( b) 3<br>( c) 4 ( d) 2 | 2 |

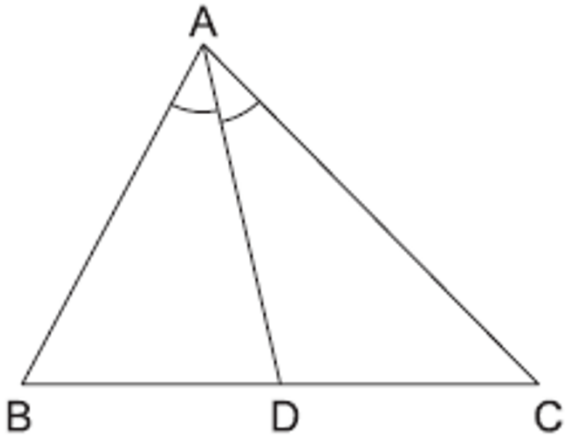
| | | |
|---|---|---|
| 42 | ABCD is a trapezium in which AB is parallel to DC and P and Q are points on AD and BC, respectively such that PQ is parallel to DC. If PD = 18 cm, BQ = 35 cm and QC = 15 cm, find AD.<br>( a) 60 cm ( b) 50 cm<br>( c) 40 cm ( d) 35 cm | 3 |
| 43 | If $\Delta$ ABC ~ $\Delta$ DEF, AB = 4 cm, DE = 6 cm, EF = 9 cm and FD = 12 cm, Find the perimeter of $\Delta$ ABC.<br>( a) 12 cm ( b) 15 cm<br>( c) 18 cm ( d) 20 cm | 2 |
| 44 |  <br>In the above figure, D and E are points on the sides AB and AC respectively of a $\triangle$ABC such that DE $\|$ BC.If $\frac{AD}{DB} = \frac{4}{7}$ and AC = 6.6 cm, find AE.<br>( a) 3.6 cm ( b) 4.8 cm<br>( c) 2.4 cm ( d) 1.2 cm | 2 |
| 45 | | 2 |




In the above figure, D and E are points on the sides AB and AC respectively of a △ABC such that DE || BC.Find the value of x, when, AD = (7x - 4) cm, AE = (5x - 2) cm, DB = (3x + 4) cm and EC = 3x cm

( a) 4 cm
( b) 5 cm
( c) 6 cm
( d) 7 cm

46



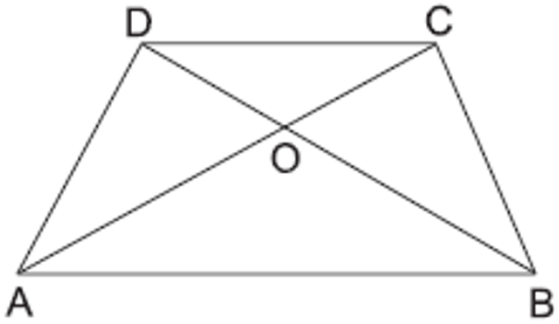

From the above figure, In a △ABC, AD is the bisector of ∠A.If AB = 5.6 cm, BD = 3.2 cm and BC = 6 cm, find AC.

( a) 2.9 cm
( b) 3.4 cm
( c) 4.3 cm
( d) 4.9 cm

2

47

2




In the above adjoining figure, ABCD is a trapezium in which CD||AB and its diagonals intersect at O. If AO = (2x + 1) cm, OC = (5x - 7) cm, DO = (7x - 5) cm and OB = (7x + 1) cm, find the value of x.

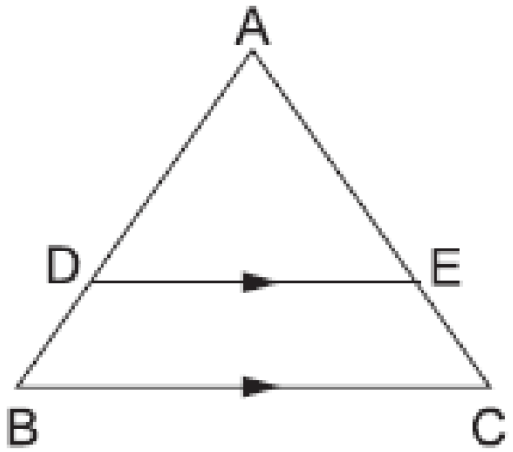
( a) 1, 3 ( b) 1, 2

( c) 1, 1 ( d) 1

48 In a △ABC, AB = 6 cm, ∠A = $45^\circ$ and AC = 8 cm and in a △DEF, DF = 9 cm, ∠D = $45^\circ$ and DE = 12 cm, then △ABC~△DEF. 2

( a) TRUE ( b) FALSE

49 3

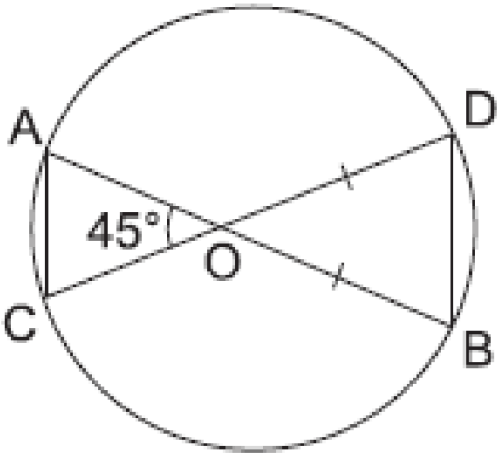



In △ABC, DE || BC so that AD = (7x - 4) cm, AE = (5x - 2) cm, DB = (3x + 4) cm and EC = 3x cm. Then, we have

( a) x=3 ( b) x=5

( c) x=4 ( d) x=2.5

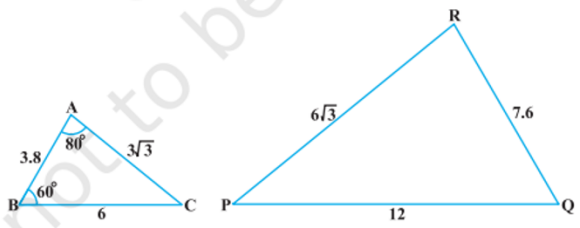
50 1




From the given figure, O is the point of intersection of two chords AB and CD such that OB = OD and $\angle AOC = 45°$. Then, $\triangle OAC$ and $\triangle ODB$ are

( a) Equilateral and similar
( b) Equilateral but not similar
( c) Isosceles and similar
( d) Isosceles but not similar

51

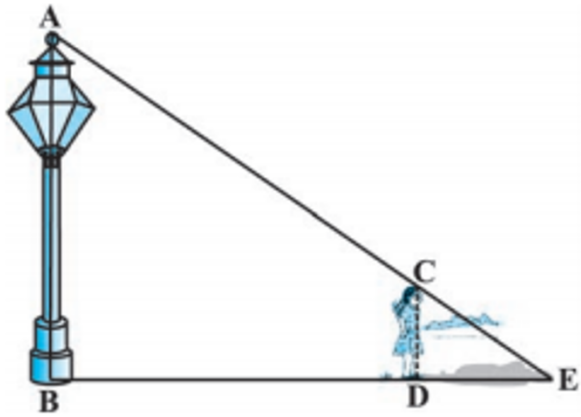



Using the above fig, find ▤ P.

( a) $30°$
( b) $80°$
( c) $60°$
( d) $40°$

2

52




2

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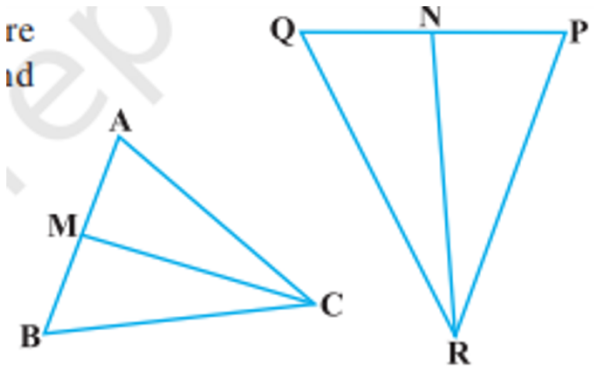
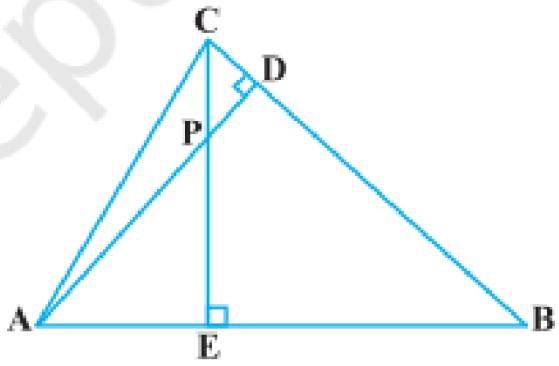
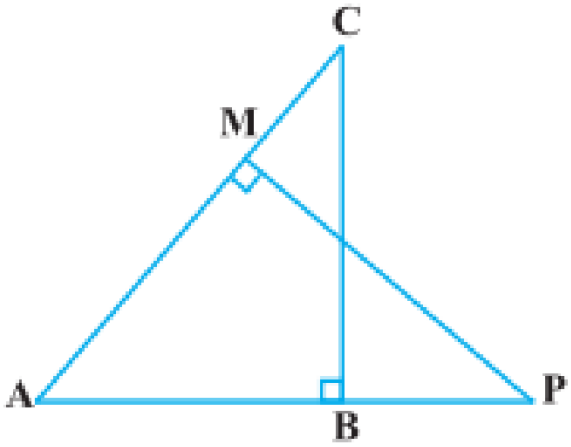
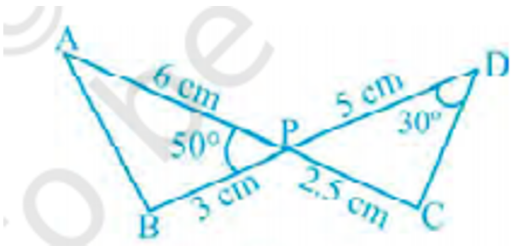
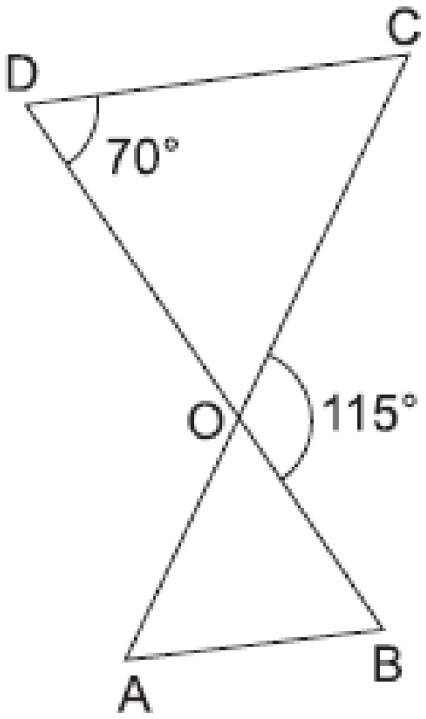
|---|---|---|
| | In the above fig is a girl of height 90 cm is walking away from the base of a lamp-post at a speed of 1.2 m/s. If the lamp is 3.6 m above the ground, find the length of her shadow after 4 seconds.<br>( a) 1.2 m ( b) 1.4 m<br>( c) 1.6 m ( d) 1.8 m | |
| 53 |  <br>In the above fig, CM and RN are respectively the medians of Δ ABC and Δ PQR. If Δ ABC ~ Δ PQR, Is $\frac{CM}{RN} = \frac{AB}{PQ}$ ?<br>( a) YES ( b) NO | 2 |
| 54 |  <br>In the above fig, altitudes AD and CE of Δ ABC intersect each other at the point P. Is ΔABD ~ Δ CEB ?<br>( a) YES ( b) NO | 1 |
| 55 | | 1 |




In the above fig, ABC and AMP are two right triangles, right angled at B and M respectively. Is ΔABC ~ ΔAMP ?

( a) YES ( b) NO

| | | |
|---|---|---|
| 56 |  <br>In the given figure, two line segments AC and BD intersect each other at the point P such that PA = 6 cm, PB = 3 cm, PC = 2.5 cm, PD = 5 cm, ∠ APB = 50° and ∠ CDP = 30°. Then, ∠ PBA is equal to<br>( a) 50° ( b) 30°<br>( c) 60° ( d) 100° | 3 |
| 57 | | 2 |

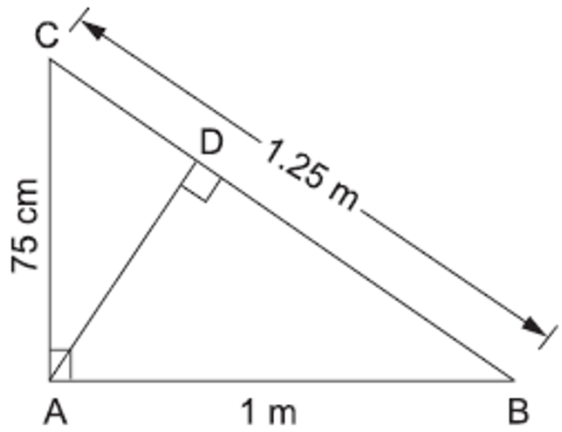



In the given figure, $\triangle ODC \sim \triangle OBA$, $\angle BOC = 115^\circ$ and $\angle CDO = 70^\circ$. Find $\angle OBA$.

( a) $70^\circ$ ( b) $75^\circ$

( c) $75^\circ$ ( d) $85^\circ$

58




In the given figure, $\angle CAB = 90^\circ$ and AD $\perp$ BC. If AC = 75 cm, AB = 1m and BC = 1.25 m, find AD.

( a) 80 cm ( b) 60 cm

( c) 40 cm ( d) 100 cm

1

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NIRMALA CBSE 94%

ARSHAD ALI
NIRMALA CBSE 93%

ANVESHA AGRAWAL
DPS NTPC 89%

ANSHU BHARDWAJ
ST. PALLOTI 88%

SATYAM KUMAR
NEPS 80%

ABHINAV ANAND
ST. PALLOTI 78%

ANMOL PATRA
NIRMALA CBSE 78%

## CLASS 12th

ABHISHEK ANAND
St. PALLOTI 88%

MUKTI JAISWAL
St. PALLOTI 86%

VEDANT SINGH
ST. PALLOTI 80%

# ACHIVERS 2022 - 23
# KORBA BRANCH

## ACHIVERS BILASPUR BRANCH

SHUBODH RANJAN
IIT BHU

ARVIND KUMAR
IISc BANGALORE

MANISH SINGH
IIT DELHI

AVINASH KR. SAHU
IIT KHARAGPUR

MANU KASHYAP
IIT DELHI

SUSHEELA SINGH
IIT MADRAS

ATUL BANJARE
IIT KHARAGPUR

VIBHA RANJAN
IIT GUWAHATI

RAHUL KUMAR
IIT BOMBEY

P. CHAITANYA
IIT BOMBEY

PRAKHAR JAIN
IISc BANGALORE

ANKUR GUPTA
IIIT HYDERABAD

Many More ....

## Sonal Sir With Director ISRO (PS Goel Sir)

**SONAL SIR**

- Ex Government Nuclear Scientist Bhabha Atomic Reserch Centre (Mumbai)
- Trained More then 1 lakh students online and Offline - Bilaspur, Bhilai, Delhi

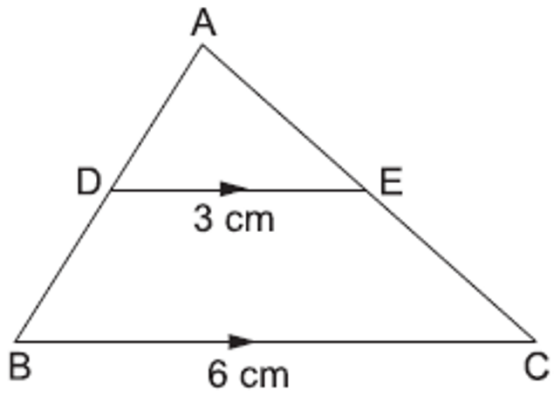


### सीयू के छात्र मनु व मनीष का इंटेल कंपनी में चयन, 21 लाख सालाना पैकेज

बिलासपुर | छात्र मनु कश्यप और मनीष कुमार सिंह का चयन इंटेल प्राइवेट लिमिटेड के लिए हुआ है। कंपनी इन छात्रों को सालाना 21 लाख रुपए का पैकेज दे रही है। ये दोनों छात्र सत्र 2017 में सीयू के इलेक्ट्रॉनिक्स एंड कम्युनिकेशन इंजीनियरिंग विभाग से बीटेक की उपाधि प्राप्त की। वर्तमान में ये भारतीय प्रौद्योगिकी संस्थान (आईआईटी) दिल्ली में एमटेक कर रहे हैं। इंटेल कॉरपोरेशन एक अमेरिकी बहुराष्ट्रीय कंपनी है। सिलिकॉन वैली में सांता क्लारा स्थित इस कंपनी का भारत में मुख्यालय बेंगलुरु है।

**Our Students from Bilaspur Centre**

**Placed in** intel

| | | |
|---|---|---|
| 59 |  <br>From the given figure, DE ‖ BC. If DE = 3 cm, BC = 6 cm and ar(△ADE) = 15 $cm^2$, find the area of △ABC.<br>( a) 15 $cm^2$ ( b) 30 $cm^2$<br>( c) 60 $cm^2$ ( d) 120 $cm^2$ | 3 |
| 60 | The shadow of a 5-m-long stick is 2 m long. At the same time the length of the shadow of a 12.5-m-high tree (in m) is:<br>( a) 3 ( b) 3.5<br>( c) 4.5 ( d) 5 | 3 |
| 61 | In a triangle, the perpendicular from the vertex to the base , bisects the base. Then the triangle is called<br>( a) right-angled ( b) isosceles<br>( c) scalene ( d) obtuse-angled | 1 |

# MATHEMATICS - 10TH

## IMPORTANT MCQ'S – MATHS (10TH GRADE)

## TRIANGLE

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---|---|---|---|---|---|---|---|
| A | B | C | A | B | A | A | A |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| B | A | B | B | A | B | A | B |
| 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |
| B | A | B | A | C | C | A | A |
| 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| C | D | B | D | B | A | A | D |
| 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| B | B | A | C | C | B | B | A |
| 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| D | A | C | C | A | D | C | B |

# MATHEMATICS - 10TH

## IMPORTANT MCQ'S – MATHS (10TH GRADE)

## TRIANGLE

| 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 |
|---|---|---|---|---|---|---|---|
| C | C | D | C | A | A | A | D |
| 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 |
| A | B | C | D | B | - | - | - |
| 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 |
| - | - | - | - | - | - | - | - |
| 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 |
| - | - | - | - | - | - | - | - |
| 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 |
| - | - | - | - | - | - | - | - |
| 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 |
| - | - | - | - | - | - | - | - |