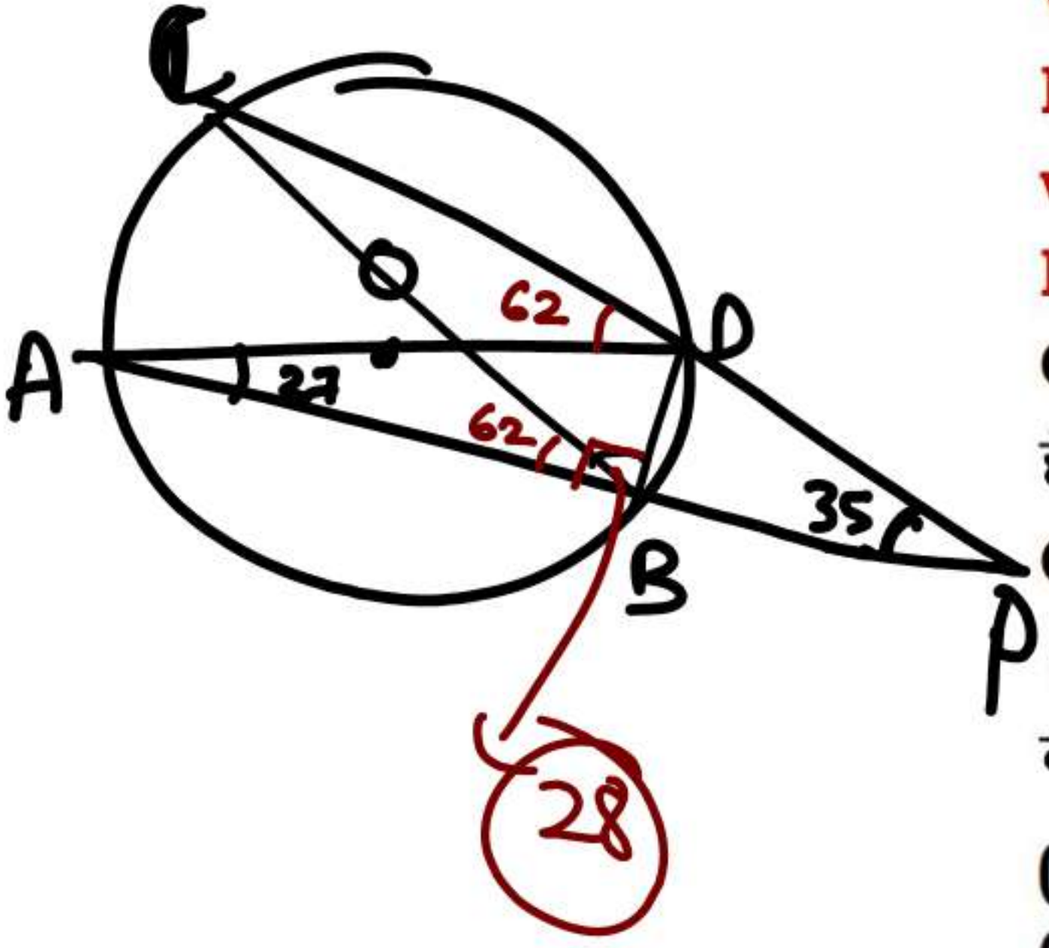
Mains Special Batch

Geometry

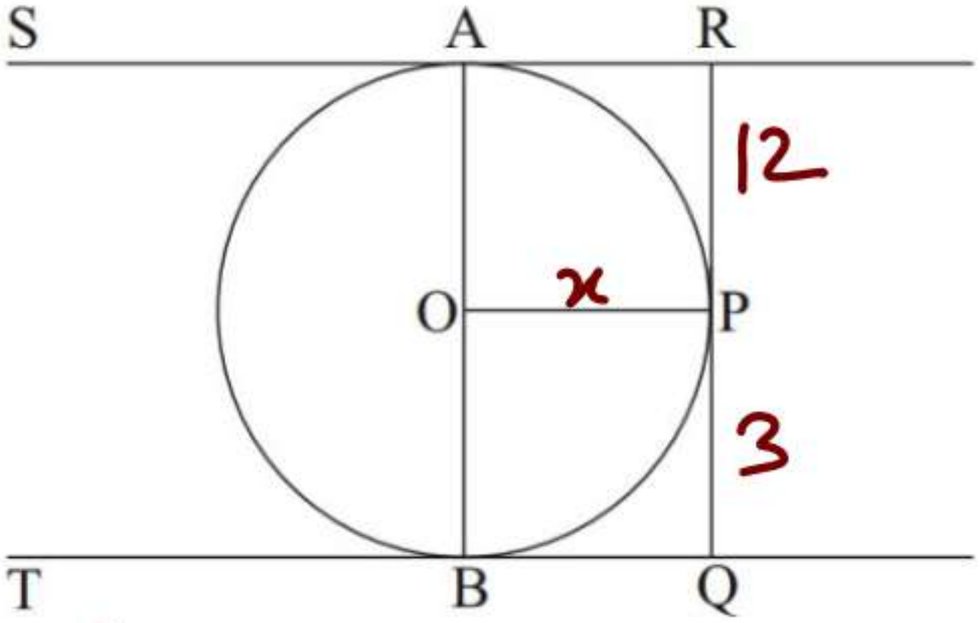
Last Class



AB and CD are two chords in a circle with centre O and AD is the diameter. When produced, AB & CD meet at point P. If ∠ DAP = 27°, ∠ APD = 35°, then what is the measure (in degrees) of ∠ DBC?

O केंद्र वाले एक वृत्त में **AB** और **CD** दो जीवाएँ हैं और **AD** इसका व्यास है। बढ़ाने पर **AB** और **CD** बिंदु **P** पर मिलते हैं। यदि ∠ **DAP = 27°**, ∠ **APD = 35°** है, तो ∠ **DBC** का माप (डिग्री में) क्या है?

(a) 32
(b) 30
(c) 26
(d) 28

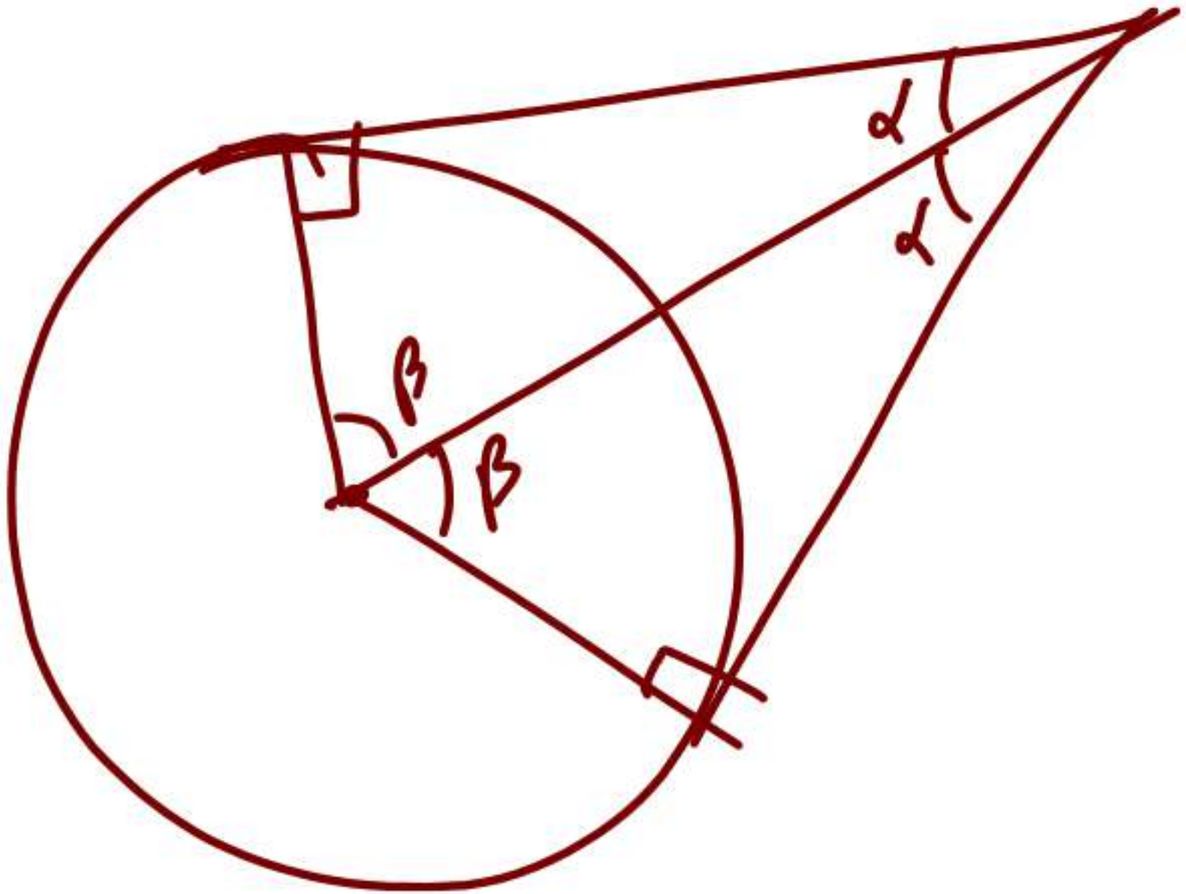


In the given fig. A tangent SR touches a circle with diameter AB at point A and tangent TQ touches the circle at point B. If RP = 12 cm and PQ = 3 cm, then find the value of OP. (O is the centres of the circle)

दिए गए चित्र में एक स्पर्शरेखा **SR** बिंदु **A** पर व्यास **AB** वाले एक वृत्त को स्पर्श करती है और स्पर्शरेखा **TQ** वृत्त को बिंदु **B** पर स्पर्श करती है। यदि **RP = 12** सेमी और **PQ = 3** सेमी है, तो **OP** का मान ज्ञात कीजिए। (**O** वृत्त का केंद्र है)

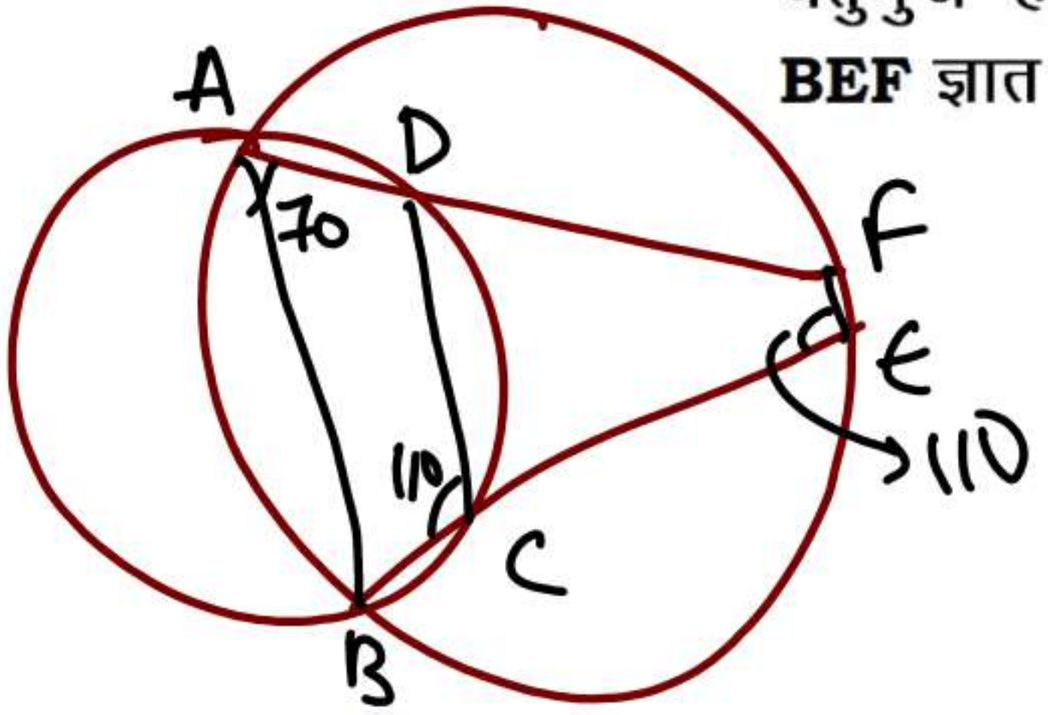
(a) 8 cm **(b) 9 cm**

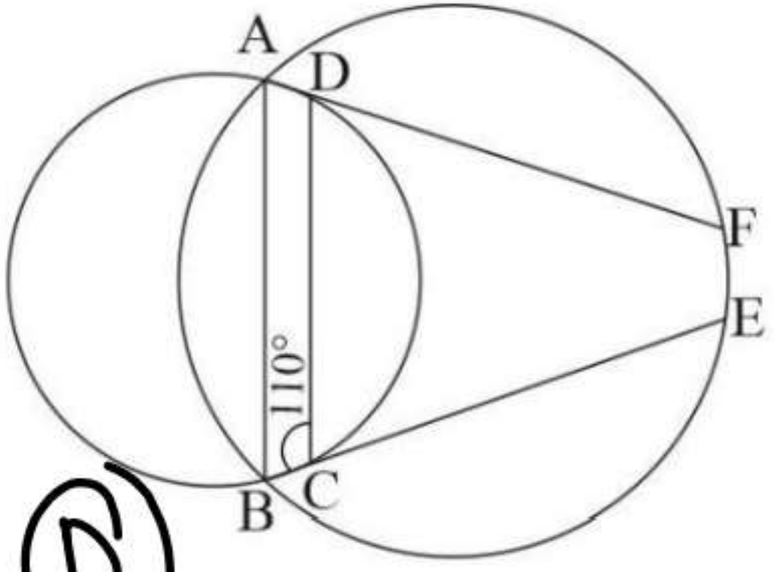
(c) 6 cm **(d) 10 cm**


α
α
β
β

In the given fig. ABCD and ABEF are two cyclic quadrilaterals. If ∠ BCD = 110° then find ∠ BEF

दी गई आकृति में **ABCD** और **ABEF** दो चक्रीय चतुर्भुज हैं। यदि ∠ **BCD = 110°** हो, तो ∠ **BEF** ज्ञात कीजिए?





(a) 55°

(b) 70°

(c) 90°

(d) 110°

If in two circles, arc of the same length subtend angles 60° and 75° at the center, find the ratio of their radii.

यदि दो वृत्तों में, समान लंबाई के चाप केंद्र पर **60°** और **75°** के कोण अंतरित करते हैं, तो उनकी त्रिज्याओं का अनुपात ज्ञात कीजिए।

(a) 2:3
(b) 5:4
(c) 3:4
(d) 4:5

$\theta = \frac{\text{Arc} \rightarrow \text{same}}{r}$

$\theta \propto \frac{1}{r}$

r

~~60~~ ~~75~~

θ 4 5

r 5 4

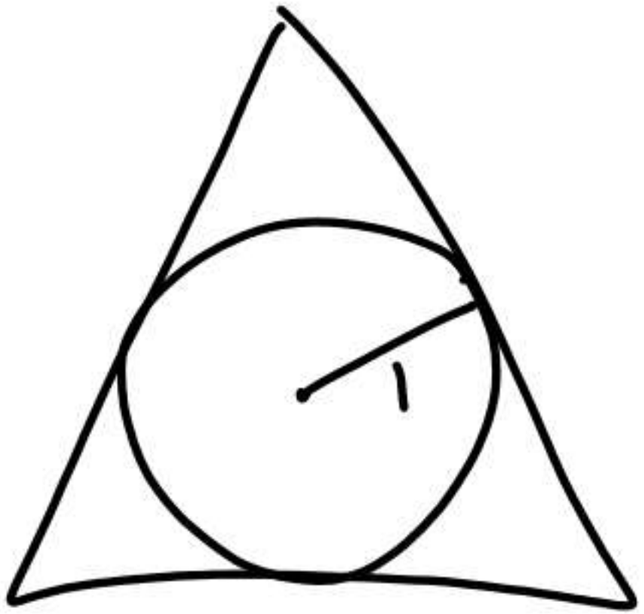
B

In an equilateral triangle of side $2\sqrt{3}$ cm, a circle is inscribed touching the sides. What is the area of the remaining portion of the triangle?

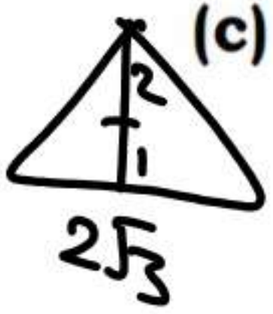
$2\sqrt{3}$ सेमी भुजा वाले एक समबाहु त्रिभुज में भुजाओं को स्पर्श करते हुए एक वृत्त अंकित हुआ है। त्रिभुज के शेष भाग का क्षेत्रफल क्या है?

(a) $\left(2\sqrt{3}-\pi\right)$ cm (b) $\left(3\sqrt{3}-\pi\right)$ cm

(c) $\left(4\sqrt{3}-2\pi\right)$ cm (d) $\left(4\sqrt{3}-\pi\right)$ cm



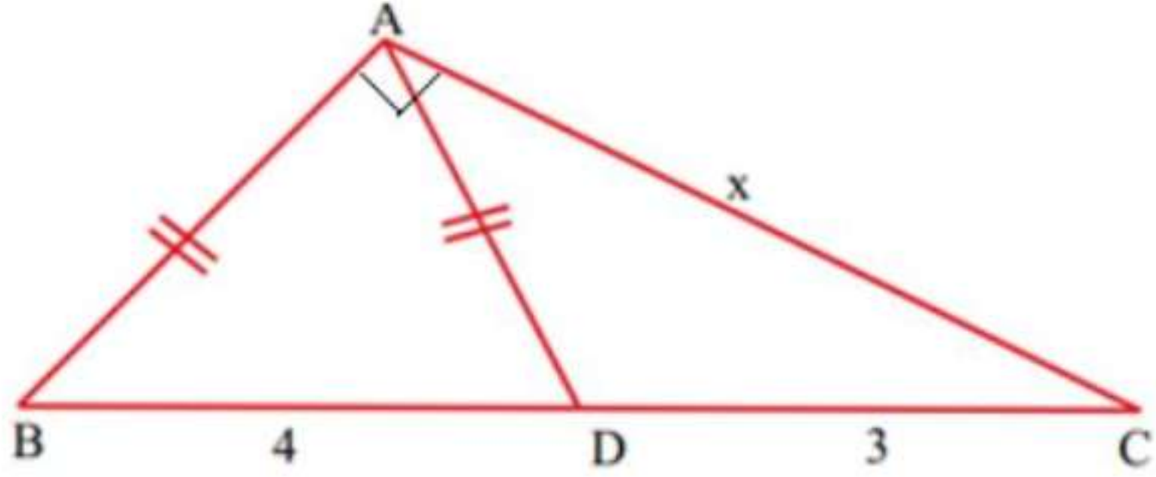
$\frac{\sqrt{3}}{4} \times 12 - \pi(1)^2$



(B)

Find the value of x

x का मान बताओं

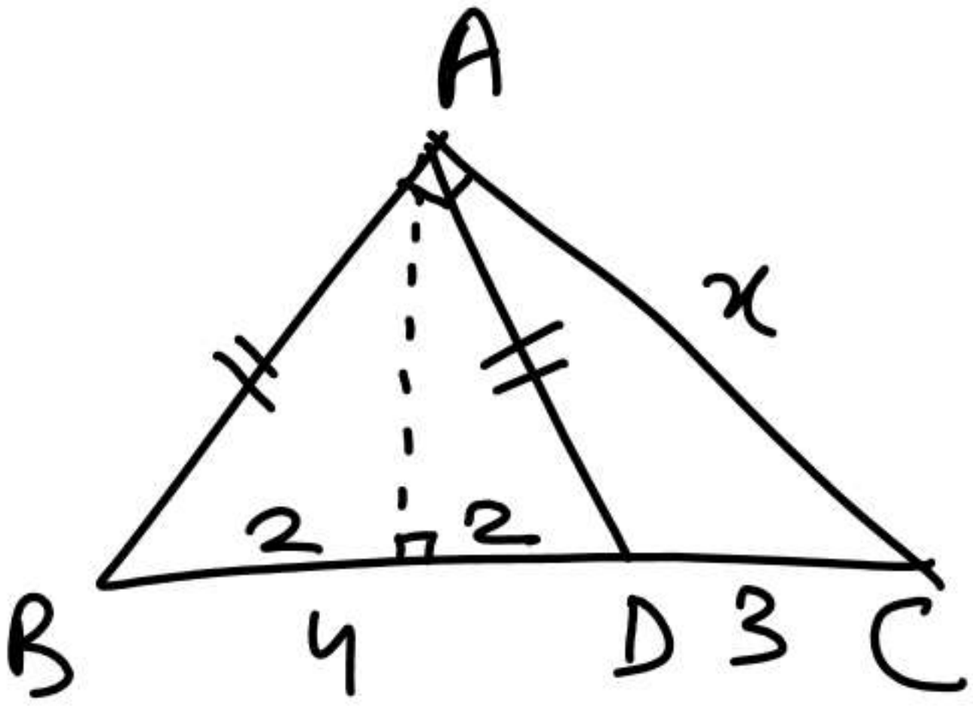


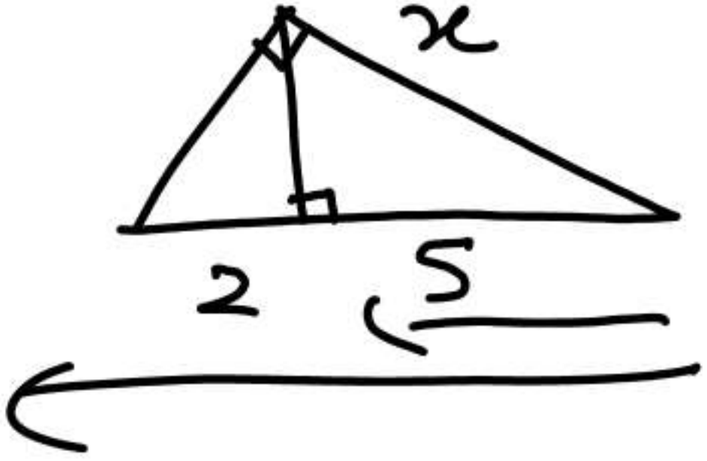
(a) $\sqrt{35}$

(b) $\sqrt{37}$

(c) $\sqrt{25}$

(d) $\sqrt{38}$



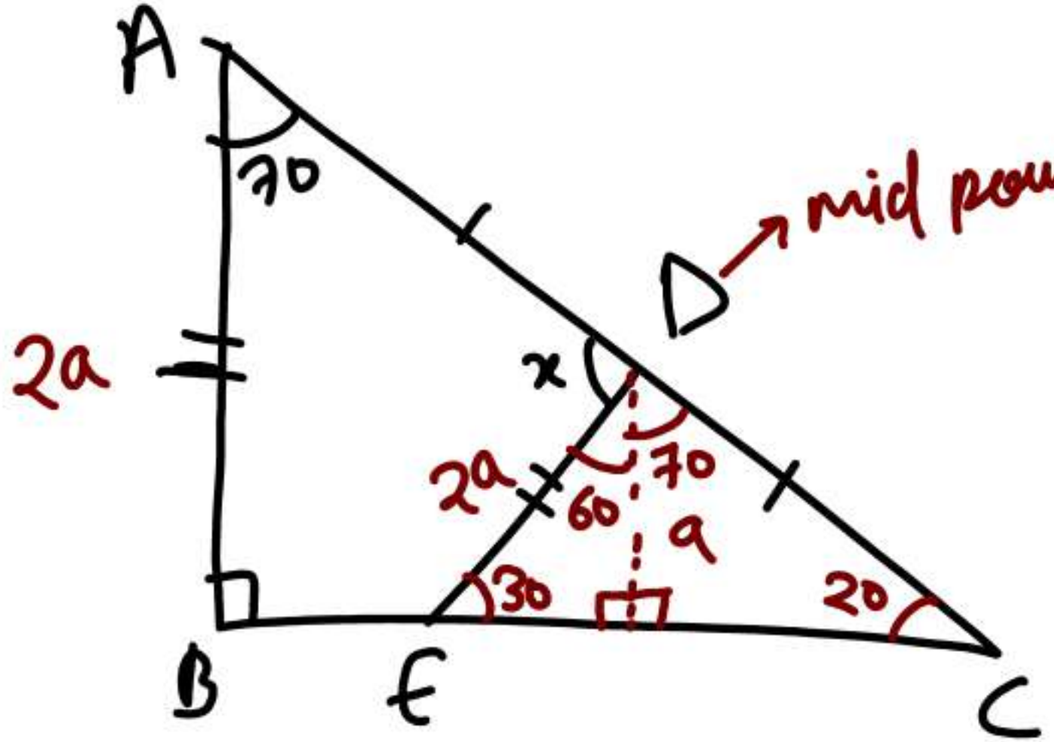


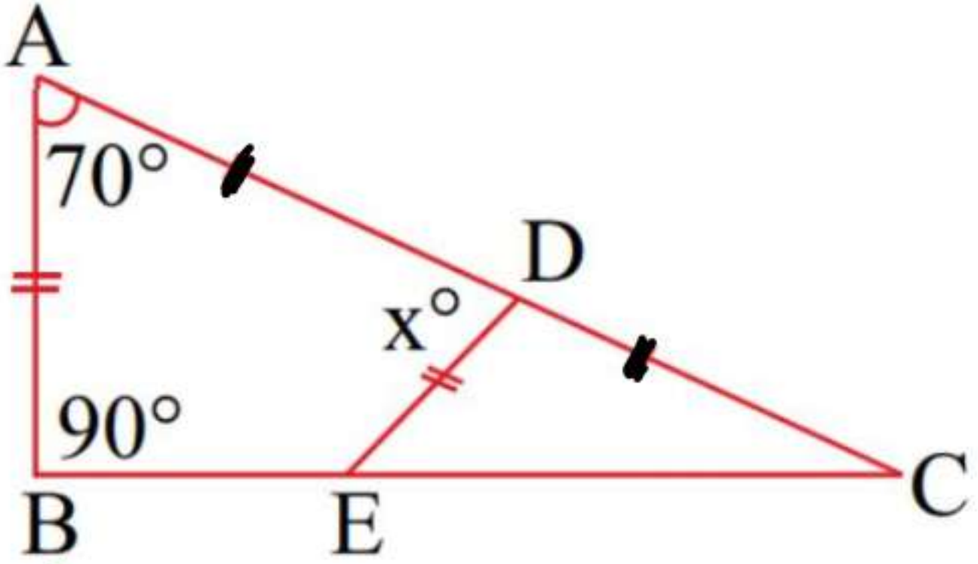
$5 \times 7 = x^2$

$x = \sqrt{35}$

(A)

.Find x





$x = 180 - 130$

$= 50$

(a) 50°
(b) 60°
(c) 70°
(d) 80°

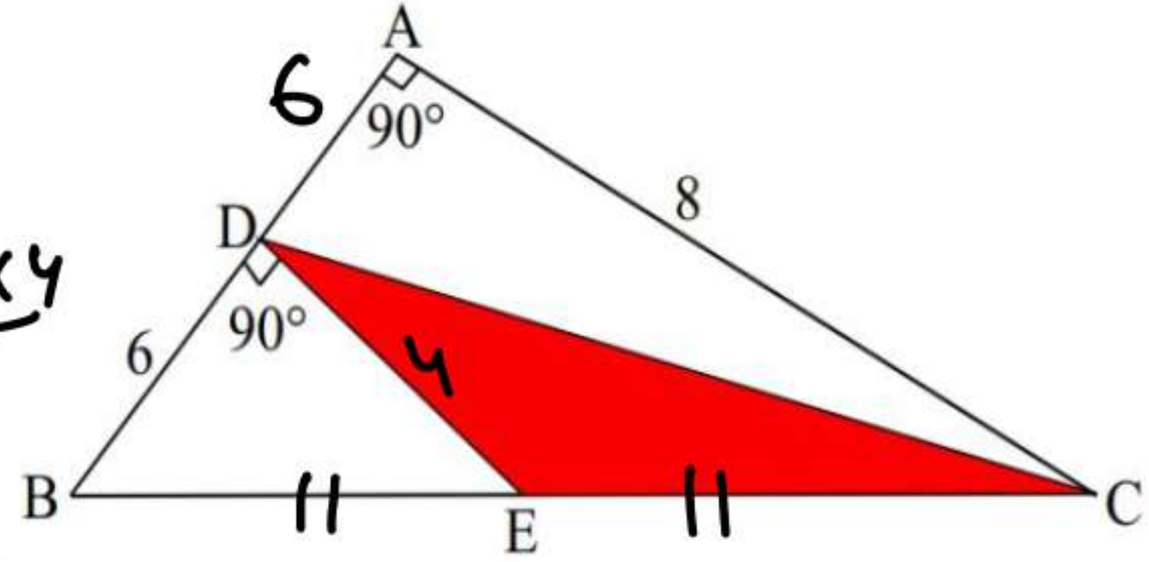
A

If AC = 8, BD = 6, BE = EC. Find area of shaded region. (छायांकित क्षेत्रफल)

$\frac{1}{2}\times 8\times 12 - \frac{1}{2}\times 6\times 8$

$- \frac{1}{2}\times 6\times 4$

$\frac{24}{2} = 12$



(a) 12 unit²

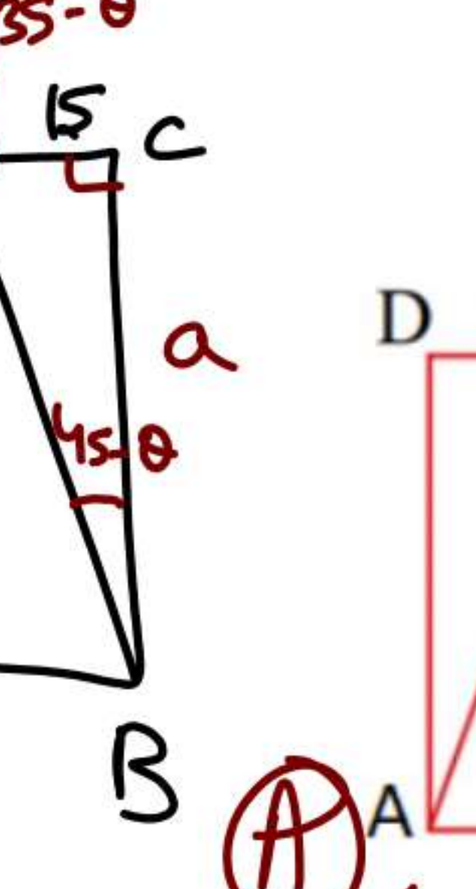
(b) 15 unit²

(c) 9 unit²

(d) NOT

A

Find the value of x in given figure when ABCD is a square. (वर्ग)



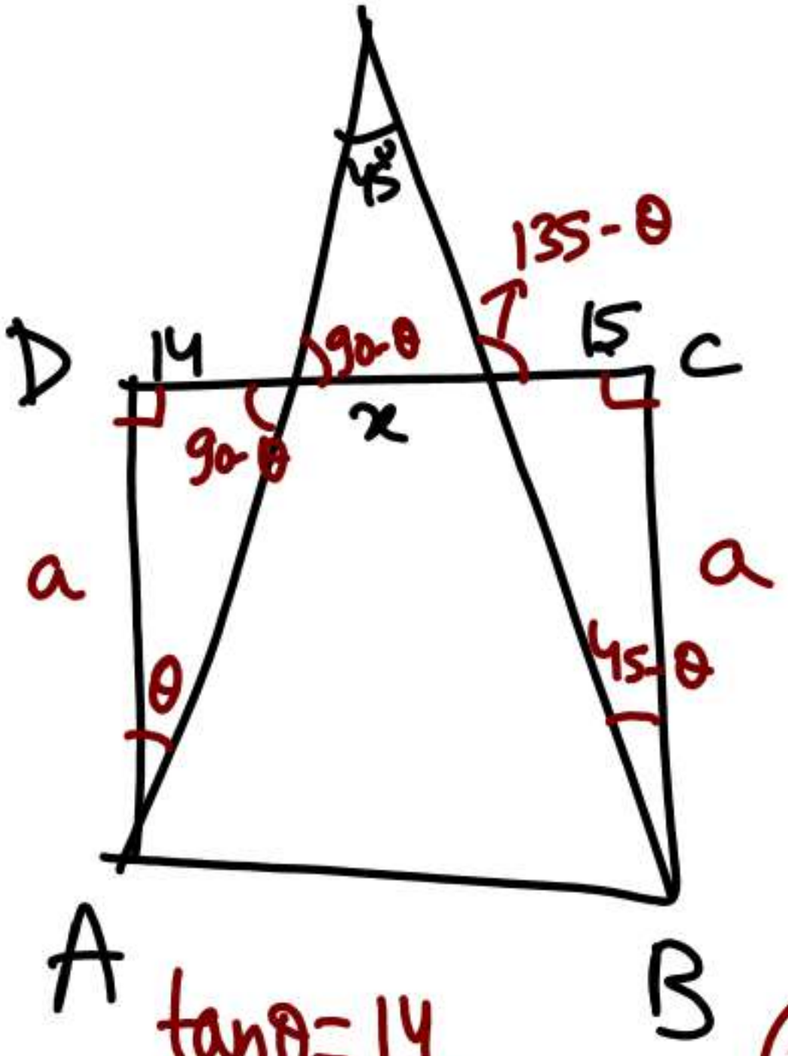
(a) 6 (b) 8

(c) 10 (d) NOT

(A) ✓

$x = 35 - 14 - 15$

$x = 6$



$\tan\theta = \frac{14}{a}$

$\tan(45-\theta) = \frac{15}{a}$

$\frac{1-\frac{14}{a}}{1+\frac{14}{a}} = \frac{15}{a}$

$\frac{a-14}{a+14} = \frac{15}{a}$

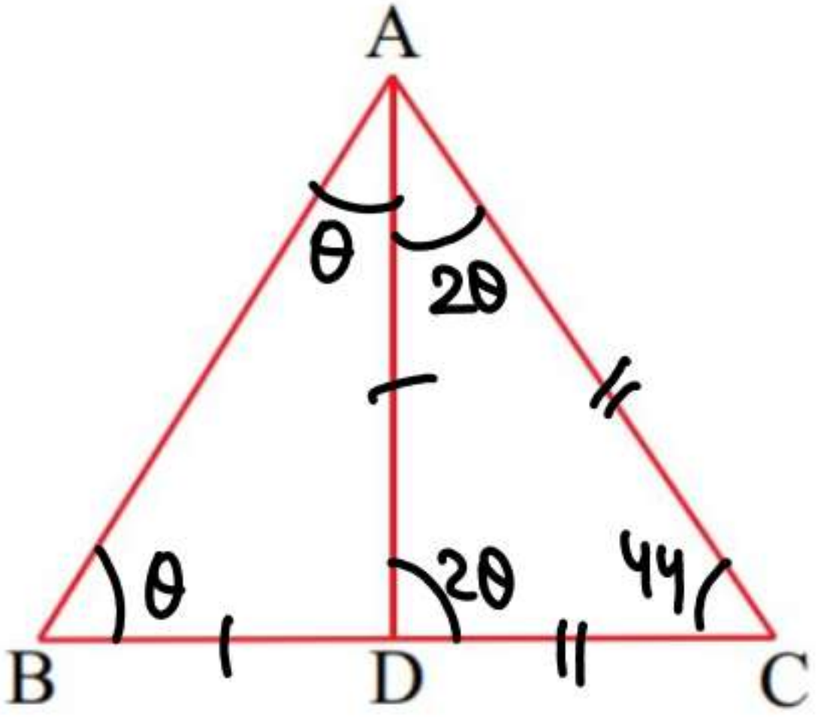
$a^2 - 14a = 15a + 210$

$a^2 - 29a - 210 = 0$

$a = 35$

In the adjoining figure in ΔABC, AD = BD and AC = DC, $\angle C = 44°$, then $\angle A$ =?

दिए गए चित्र में ΔABC में AD = BD और AC = DC, $\angle C = 44°$ तो $\angle A$ =?



$4\theta = 136$

$\theta = 34$

$3\theta = 102°$

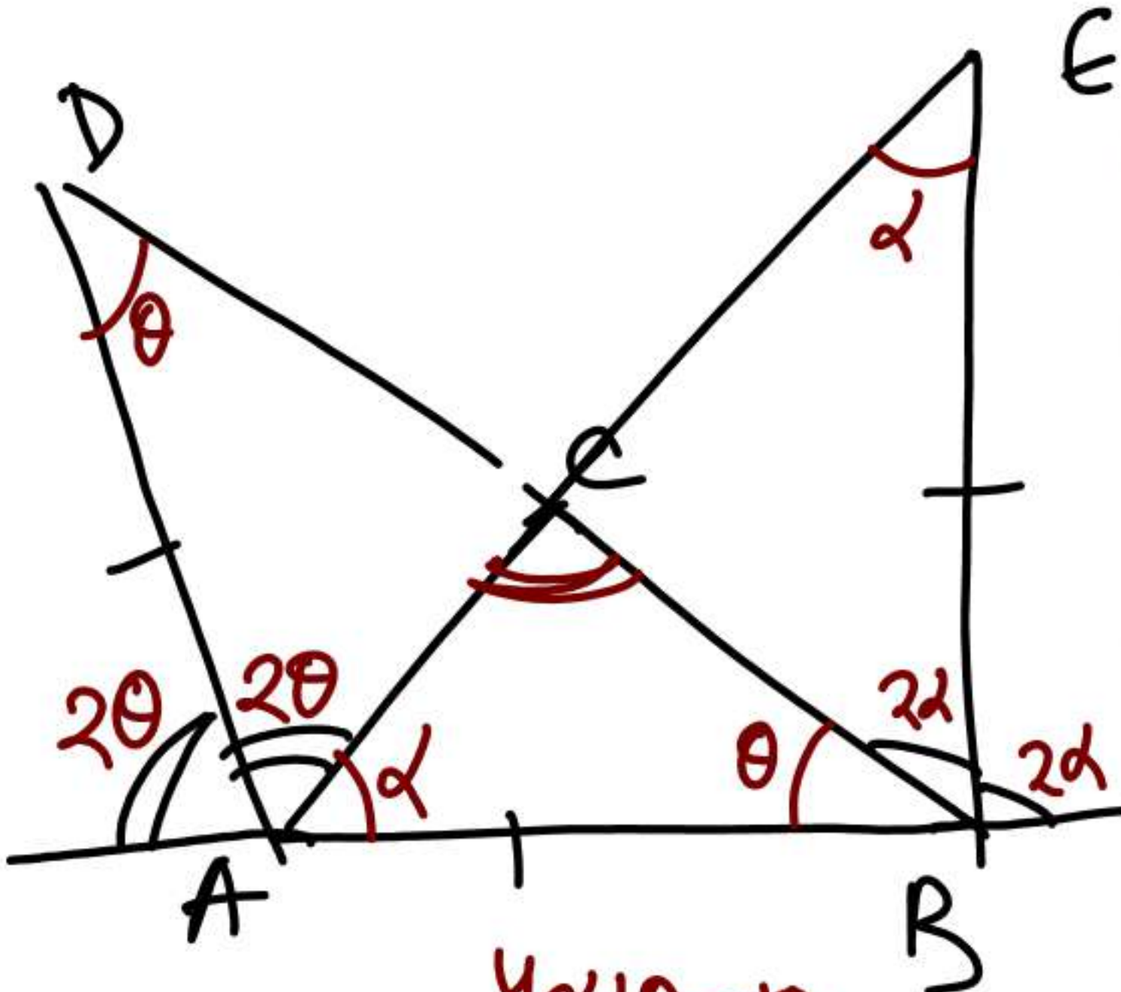
(a) 68°

(b) 34°

(c) 112°

(d) 102°

D



In ΔABC, $\angle C$ is obtuse. The external bisector of $\angle A$ and $\angle B$ meet the extended line BC and AC at point D and E. If AB = AD = BE, then find $\angle ACB$=?

ΔABC में $\angle C$ पर अधिक कोण है। $\angle A$ और $\angle B$ पर हुई **BC** और **AC** को **D** और **E** पर मिलते है यदि **AB = AD = BE** हो, तो $\angle ACB$ का मान क्या होगा ?

(a) 105°
(b) 108°
(c) 110°
(d) 135°

$4\alpha+\theta=180$

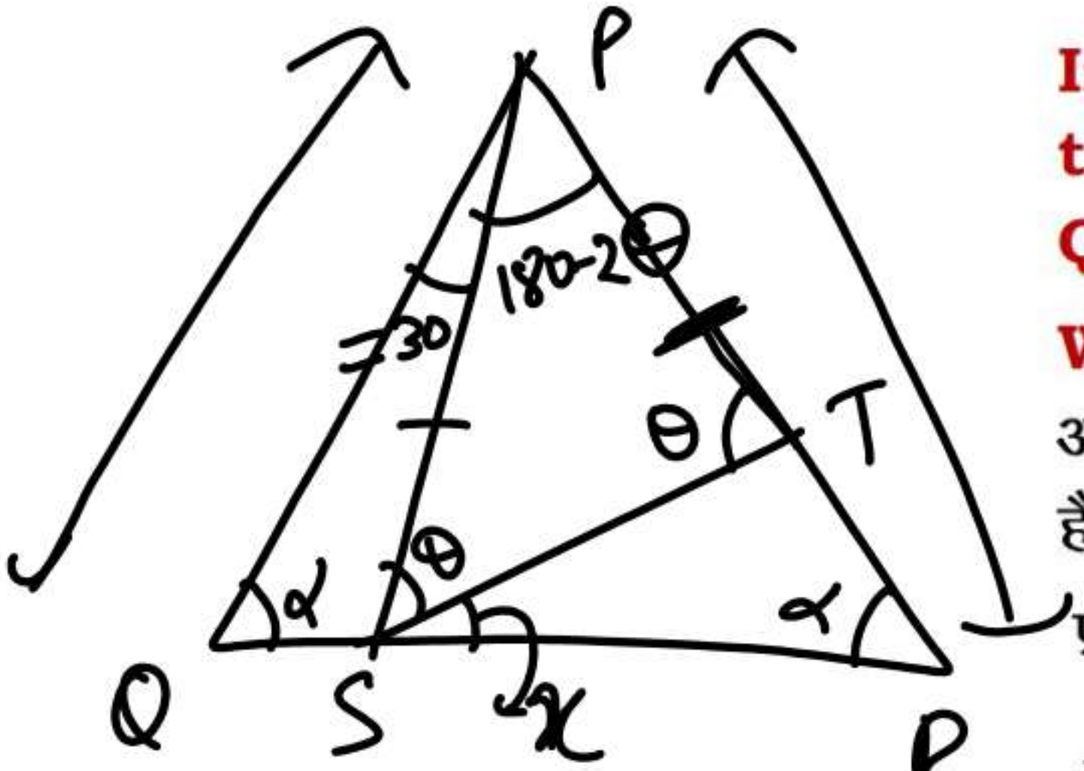
$4\theta+\alpha=180$

$5(\theta+\alpha)=360$ 72

$180-72=108^\circ$

B

B



In the figure shown PQR is an isosceles triangle with PQ = PR, S is a point on QR such that PS = PT. also ∠QPS = 30° .

What is the measure of ∠RST ?

आकृति ने दर्शाया गया है **PQR** समद्विबाहु त्रिभुज है जिसमें **PQ = PR, S, QR** पर स्थित बिंदु इस प्रकार है कि **PS = PT** और **∠QPS = 30°** . **∠RST** का मान क्या है ?

$\theta + x = \alpha + 30$

$x = \alpha - \theta + 30$

$x = 30 - 15$

PQR

$210 - 2\theta + 2\alpha = 180$

$15 = \theta - \alpha$

$\alpha - \theta = -15$

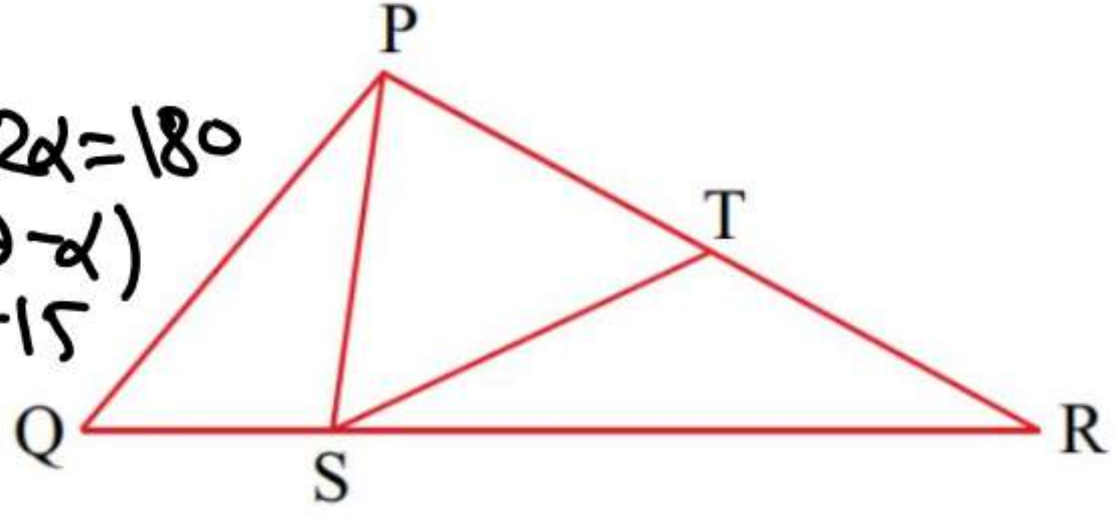
(a) 7.5°

(c) 20°

(B)

(b) 15°

(d) 45°



In right angle ΔABC, AX = AD and CY = CD, as shown in the figures below. What is the measure of $\angle XDY$?

एक समकोण ΔABC में **AX = AD** और **CY = CD** जैसा कि चित्र में दिखाया गया है $\angle XDY$ का मान क्या है ?

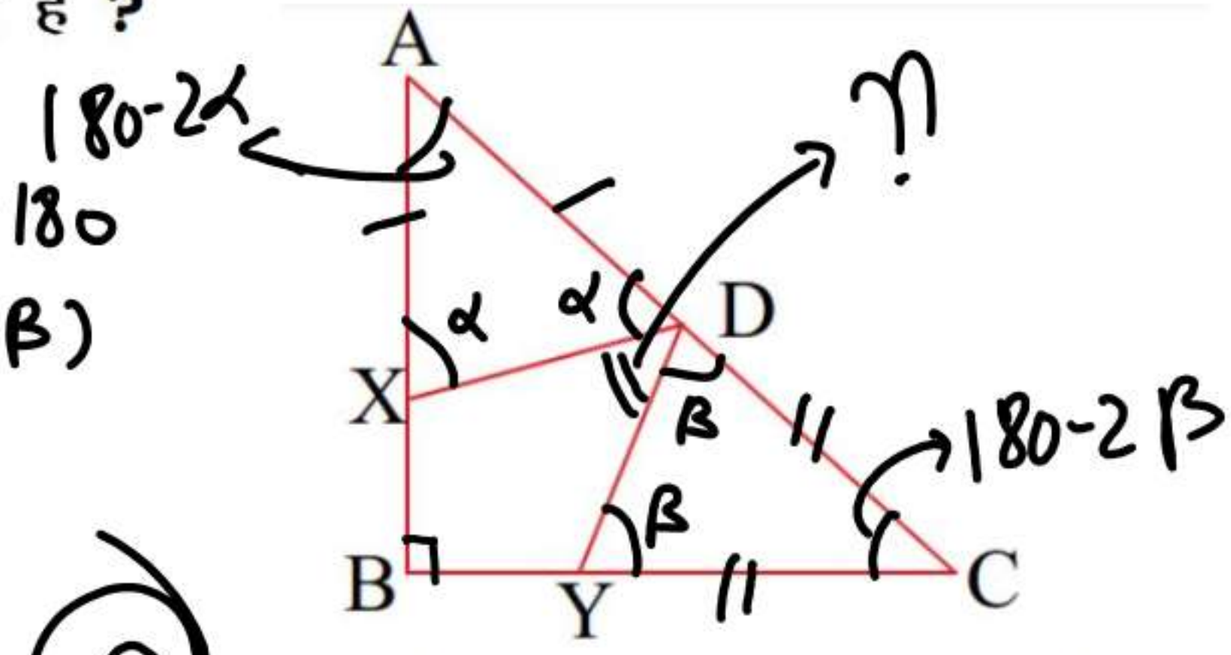
$360 - 2(\alpha+\beta) + 90 = 180$

$270 = 2(\alpha+\beta)$

$135 = 2(\alpha+\beta)$

$?? = 180 - 135$

$= 45^\circ$



(a) 35°

(b) 40°

(c) 45°

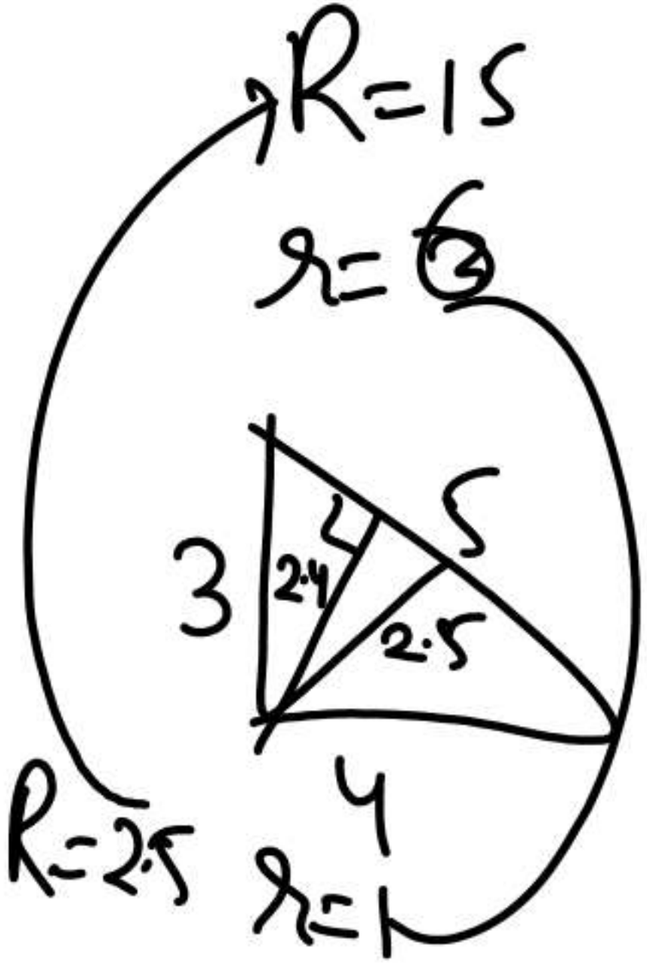
(d) CND

The radius of the circumcircle of a right angled triangle is 15 cm and the radius of its inscribed circle is 6 cm find the side of triangle.

एक समकोण त्रिभुज के परिवृत्त की त्रिज्या **15** सेमी है और अर्धवृत्त की त्रिज्या **6** सेमी है तो त्रिभुज की भुजा ज्ञात कीजिए।

(a) 30,24,25 **(b) 30,24,36**

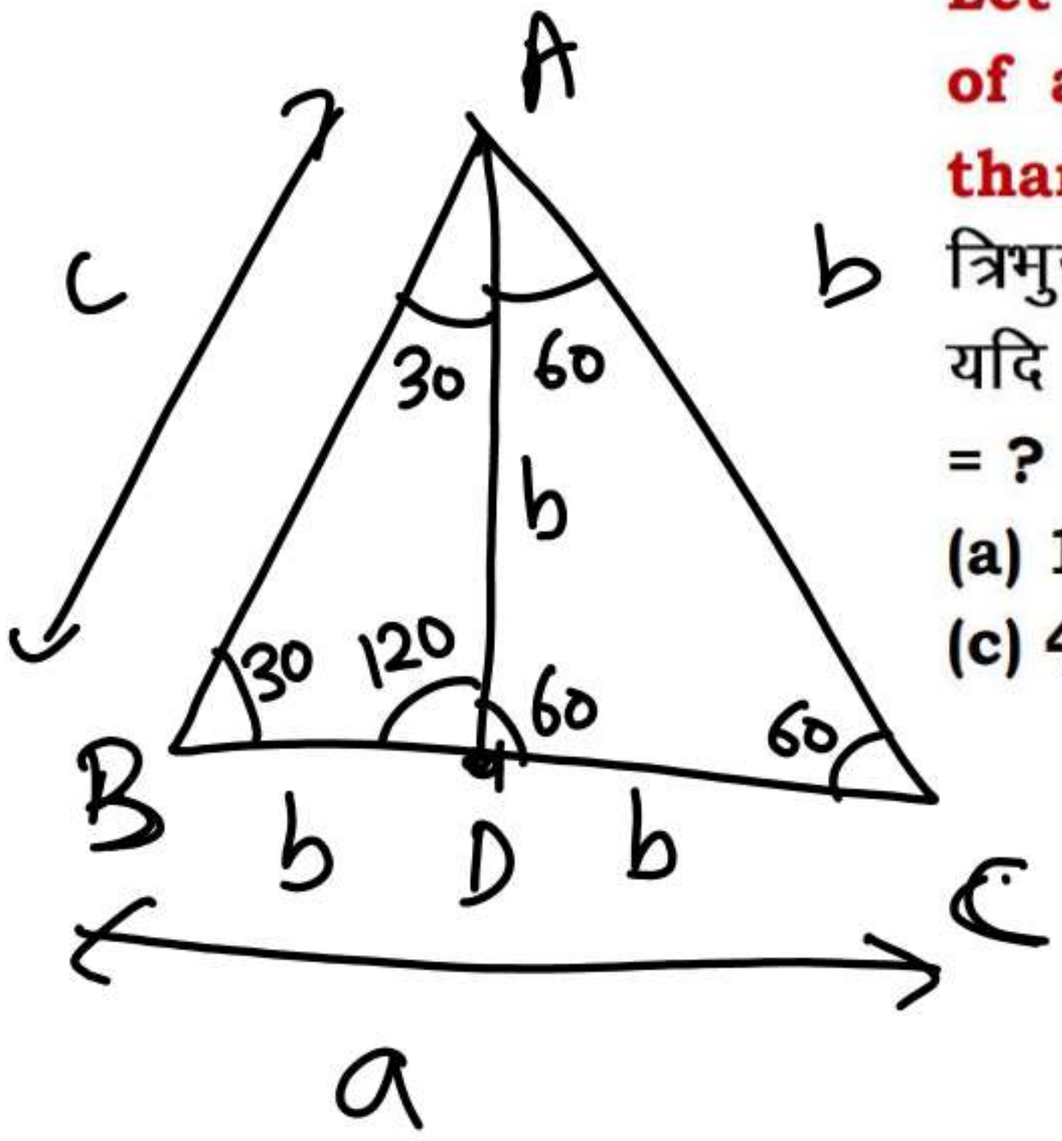
(c) 30,40,41 **(d) 18,24,30**

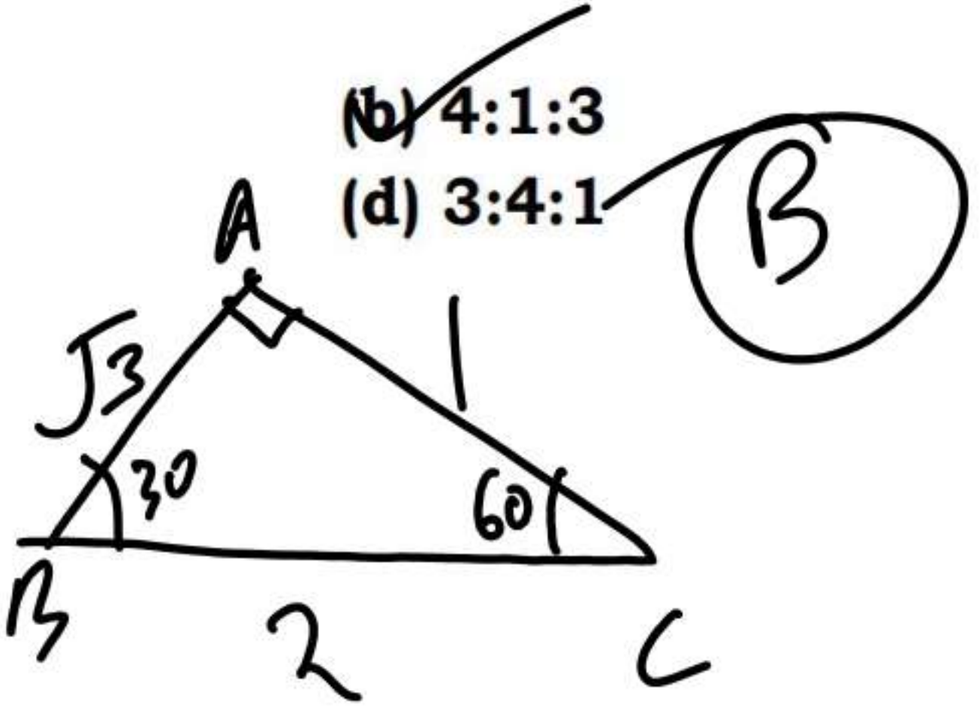


Let D be the middle point of the side BC of a ΔABC. If the ΔADC is equilateral than $a^2:b^2:c^2$ is equal to:

त्रिभुज **ABC** की भुजा **BC** का **D** मध्य बिंदु है। यदि ΔADC एक समबाहु त्रिभुज हो, तो $a^2:b^2:c^2$ = ?

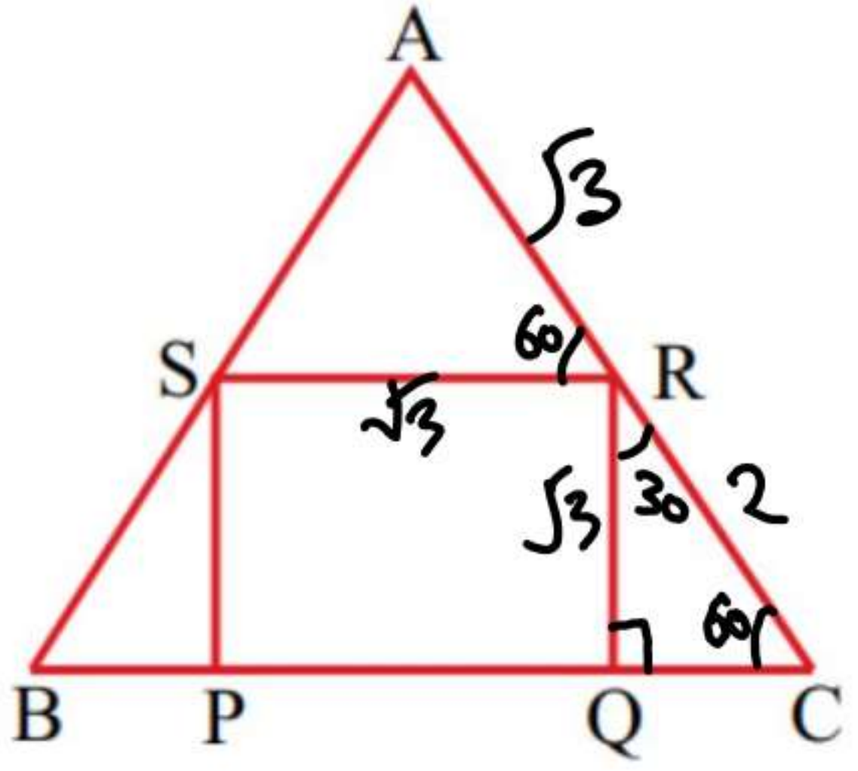
(a) 1:4:3
(b) 4:1:3
(c) 4:3:1
(d) 3:4:1





ΔABC is an equilateral triangle, PQRS is a square inscribed in it, then find which of the following is true.

ΔABC एक समबाहु त्रिभुज है, इसके अंतर्गत एक वर्ग **PQRS** है, तो निम्न में से कौन सा सत्य है।



$\frac{AR}{RC} = \frac{\sqrt{3}}{2}$

$\frac{AR^2}{RC^2} = \frac{3}{4}$

$4AR^2 = 3RC^2$

(D)

(a) $AR^2 = RC^2$

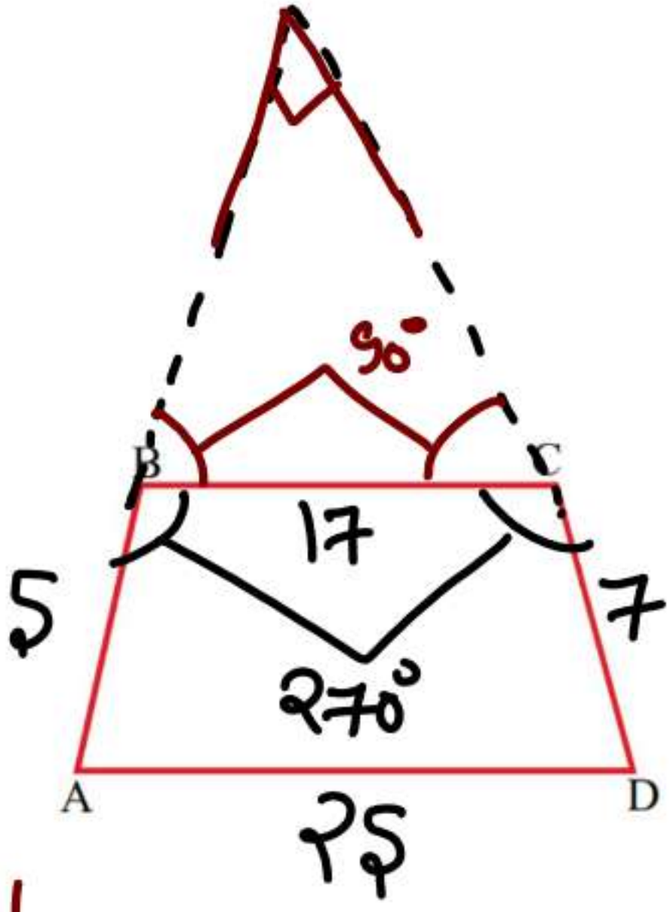
(b) $2AR^2 = RC^2$

(c) $3AR^2 = 4RC^2$

(d) $4AR^2 = 3RC^2$

In given quadrilateral AB = 5 cm BC = 17 cm, CD = 7 cm and AD = 25 cm. If $\angle ABC + \angle BCD = 270°$, then find the area of quadrilateral ABCD?

दिए गए चतुर्भुज में **AB = 5** सेमी **BC = 17** सेमी, **CD = 7** सेमी और **AD = 25** सेमी यदि $\angle ABC + \angle BCD = 270°$ है, तो चतुर्भुज **ABCD** का क्षेत्रफल ज्ञात कीजिए ?



(a) 70 cm^2

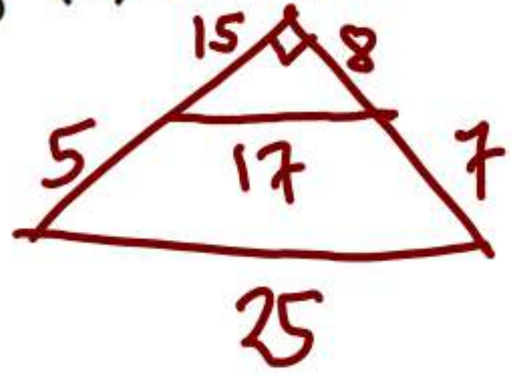
(b) 90 cm^2 ✓

(c) 60 cm^2

(d) 80 cm^2

B

$90 cm^2 = \frac{1}{2} \times 20 \times 15 - \frac{1}{2} \times 8 \times 15$



बहुत बेहतरीन Ques

There are how many different integral sided triangle possible whose perimeter is 18 unit.

पूर्ण संख्या भुजा वाले कितने त्रिभुज बनाए जा सकते है जिनको परिमाप **18** इकाई हो।

(a) 5 **(b) 6**

(c) 7 **(d) 8**

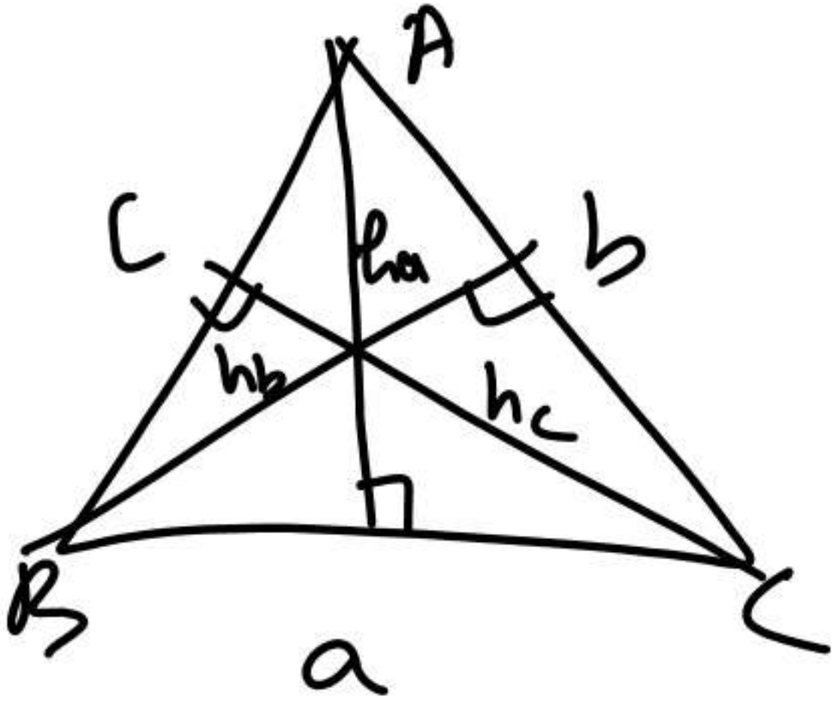
$\frac{P^2}{48}$ → P even

$\frac{(P+3)^2}{48}$ P odd

$\frac{18 \times 18}{48} = \frac{27}{4} = 6.7$

$= 7$

heavest integer



The perimeter of a triangle is 105 cm. The ratio of its altitude is 3:5:6 find the sides of the triangle.

एक त्रिभुज का परिमाप **105** सेमी है। त्रिभुज की ऊँचाई का अनुपात **3:5:6** है त्रिभुज की भुजाएँ ज्ञात कीजिए?

(a) 72,46,36 **(b) 62,28,41**

(c) 30,60,25 **(d) 50,30,25**

$\Delta = \frac{a \times h_a}{2} = \frac{b \times h_b}{2} = \frac{c \times h_c}{2}$

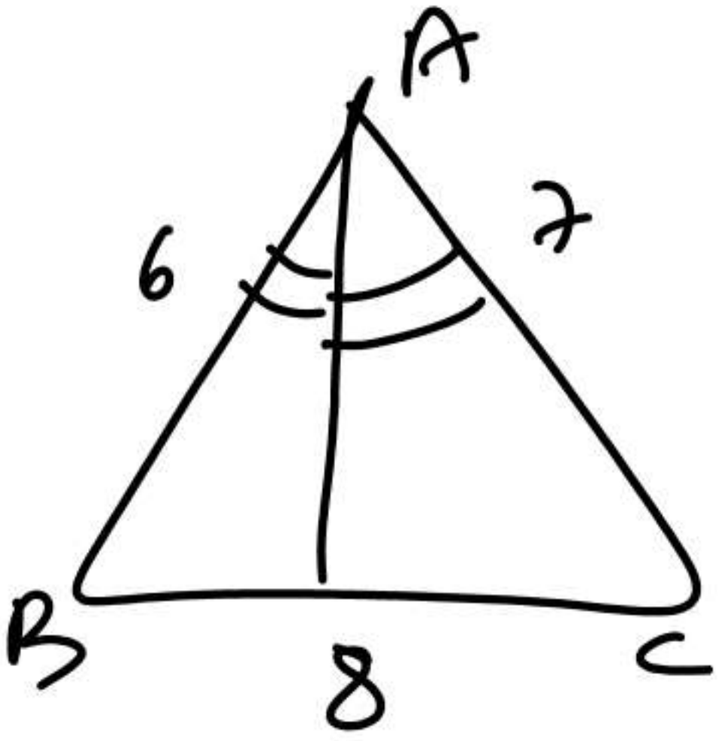
$\Delta = B \times h$

$B \propto \frac{1}{h}$

21 → 105

Side → 10 : 6 : 5

1



13 → 8
6 → 48/13

Three sides of triangle ABC are 6 cm, 7 cm and 8 cm. The angle bisector of biggest angle cut the opposite side and divides it into two segment. Find the length of smaller segment.

ΔABC की भुजाए **6** सेमी, **7** सेमी, **8** सेमी है सबसे बड़े कोण का समद्विभाजक सामने वाली भुजा को दो खंड़ो में विभाजित करता है छोटे खंड की लंबाई कितनी है

(a) $\frac{24}{5}$ cm

(b) $\frac{21}{5}$ cm

(c) $\frac{48}{13}$ cm

(d) $\frac{56}{13}$ cm

If the given fig. AB = BC, ∠ADB = ∠ABC =90° AD = 3, DC = 15 then find 'BD' or x

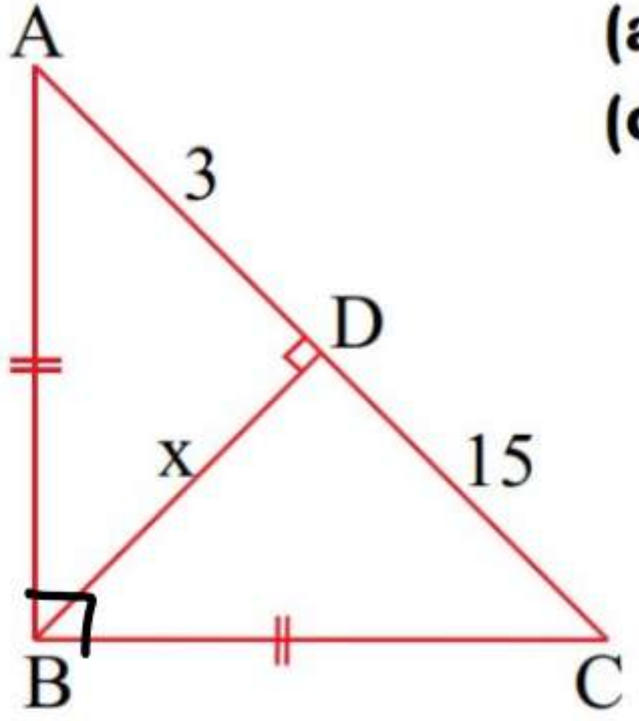
चित्र में **AB = BC, ∠ADB = ∠ABC =90° AD = 3, DC = 15** तब **'BD'** का मान बताओ?

(a) $2\sqrt{5}$ (b) $4\sqrt{5}$

(c) $3\sqrt{5}$ (d) $5\sqrt{5}$

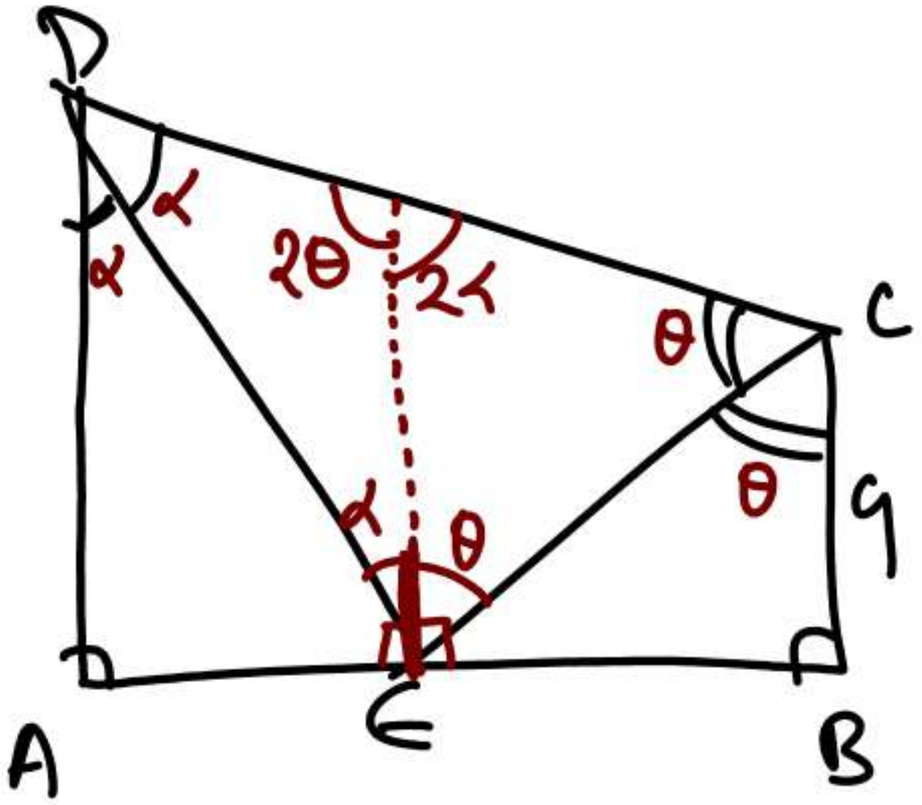
$x = \sqrt{15 \times 3}$

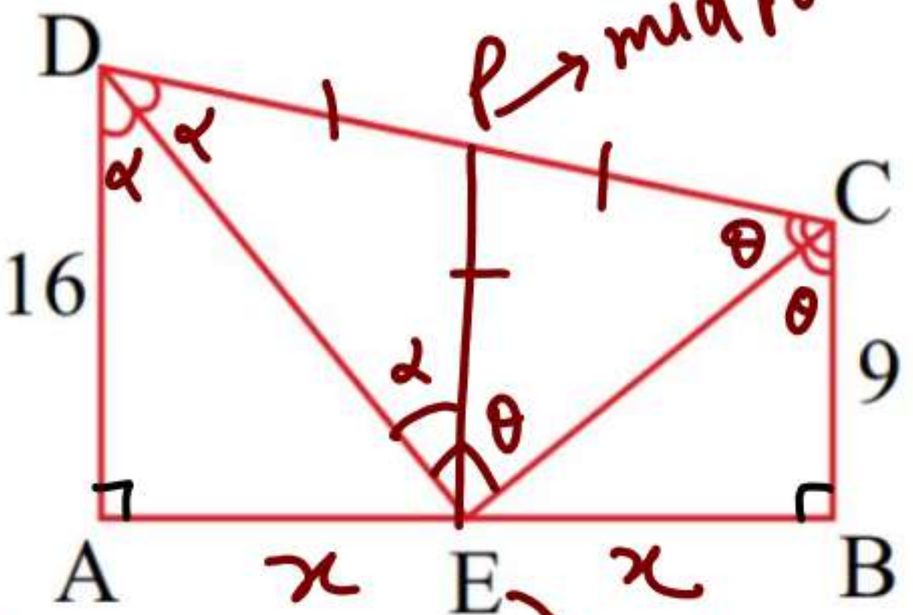
$= 3\sqrt{5}$

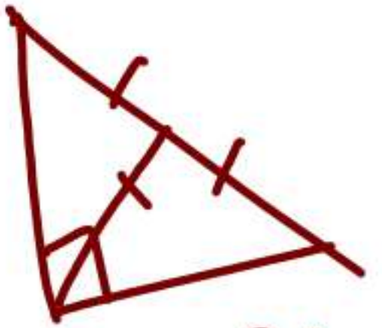


DA = 16, BD = 9 find area of ABCD.

यदि **DA = 16, BD = 9** तो **ABCD** का क्षेत्रफल ज्ञात करों?







$\alpha+\theta=90°$

$\frac{x}{16}\times\frac{x}{9}=1$

$x=12$

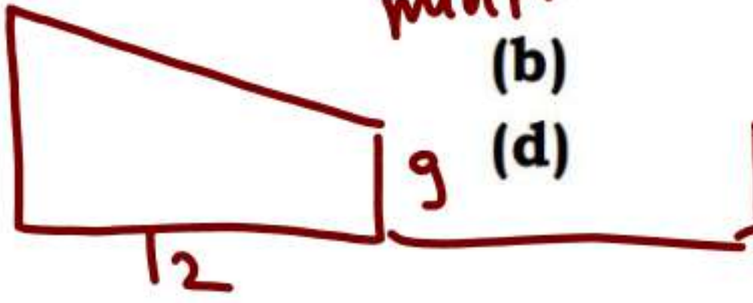
~~$2(\theta+\alpha)=180°$~~ $90°$

(a)

(b)

(c)

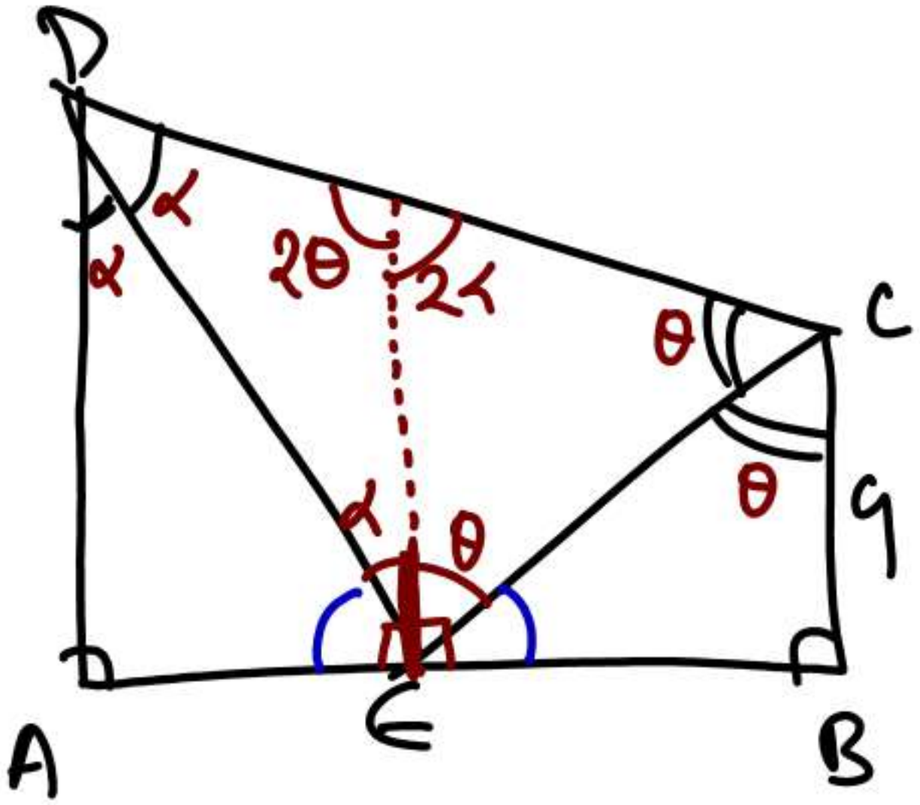
(d)



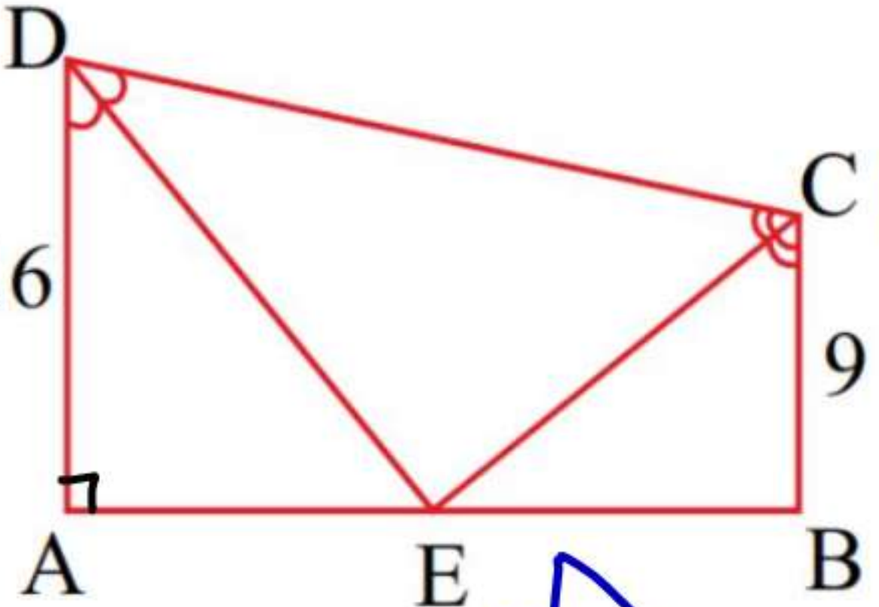
$\frac{1}{2}\times 25\times 24=300$ Ans

DA = 16, BD = 9 find area of ABCD.

यदि **DA = 16, BD = 9** तो **ABCD** का क्षेत्रफल ज्ञात करों?

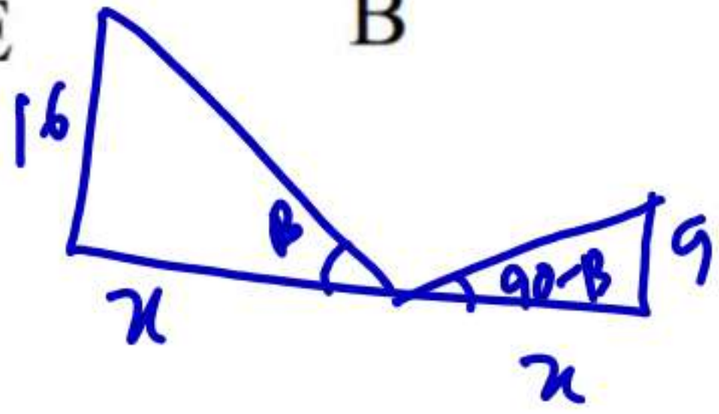


$2(\theta+\alpha)=180^\circ$ ~~90°~~



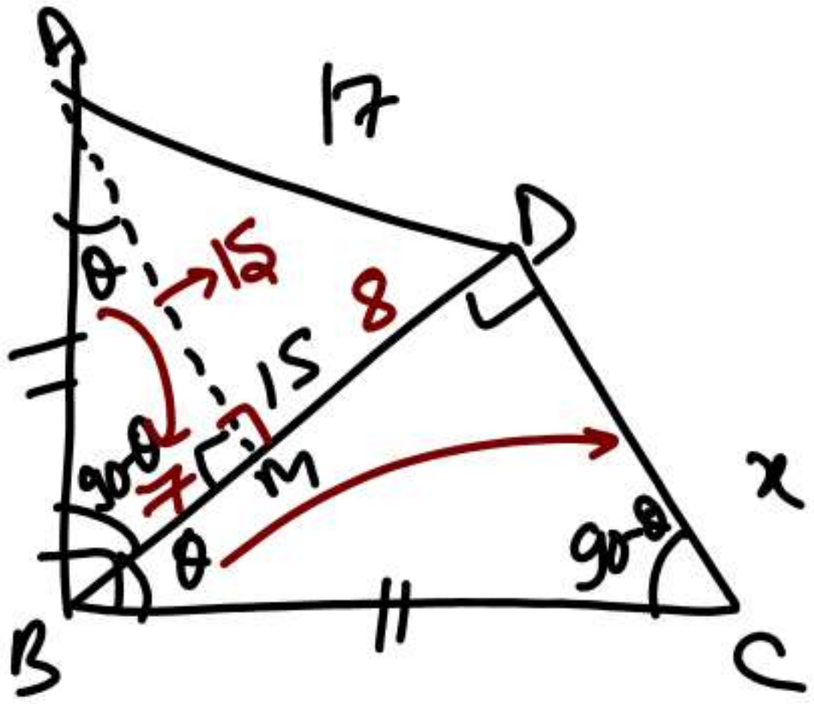
$x=\sqrt{16\times9}$

$x=12$



AD = 17 cm BD = 15 cm, find x?

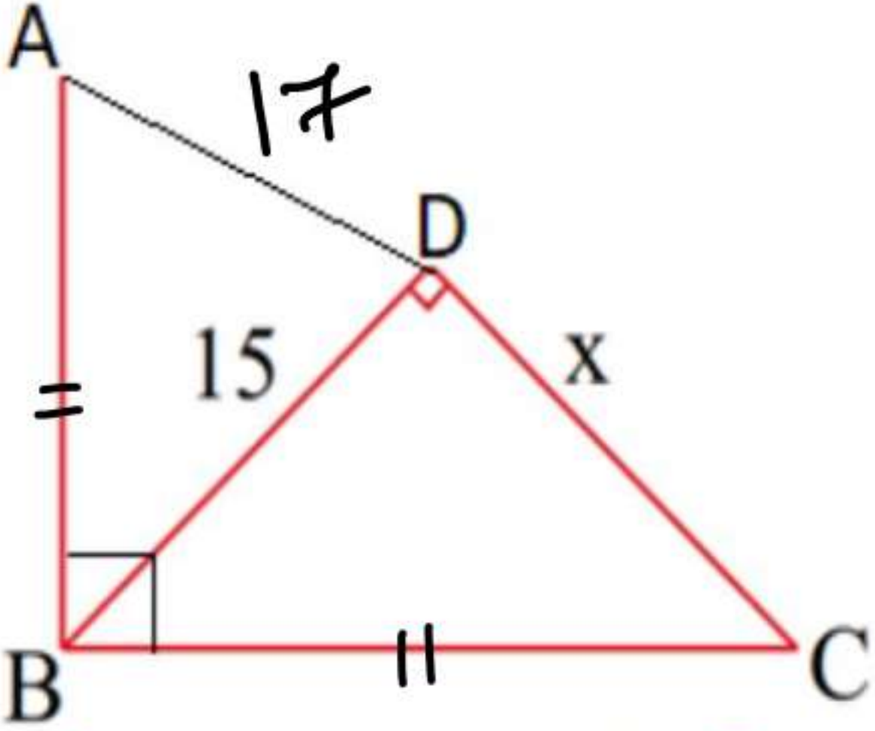
यदि **AD = 17 cm** तथा **BD = 15 cm** तो **x = ?**



$\triangle AMB \cong \triangle BDC$

$BD = AM = 15$

$x = 7$



(a) 8

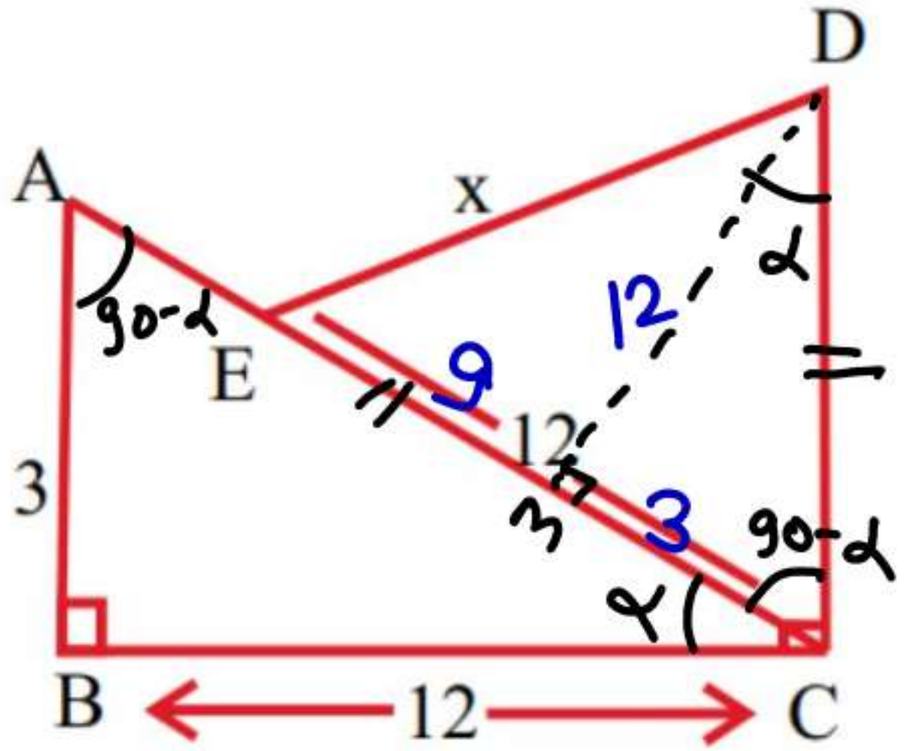
(b) 7

(c) 9

(d) None

If AC = DC, AB = 3, BC = EC = 12 find ED?

यदि AC = DC, AB = 3 तथा BC = EC = 12 तो ED = ?

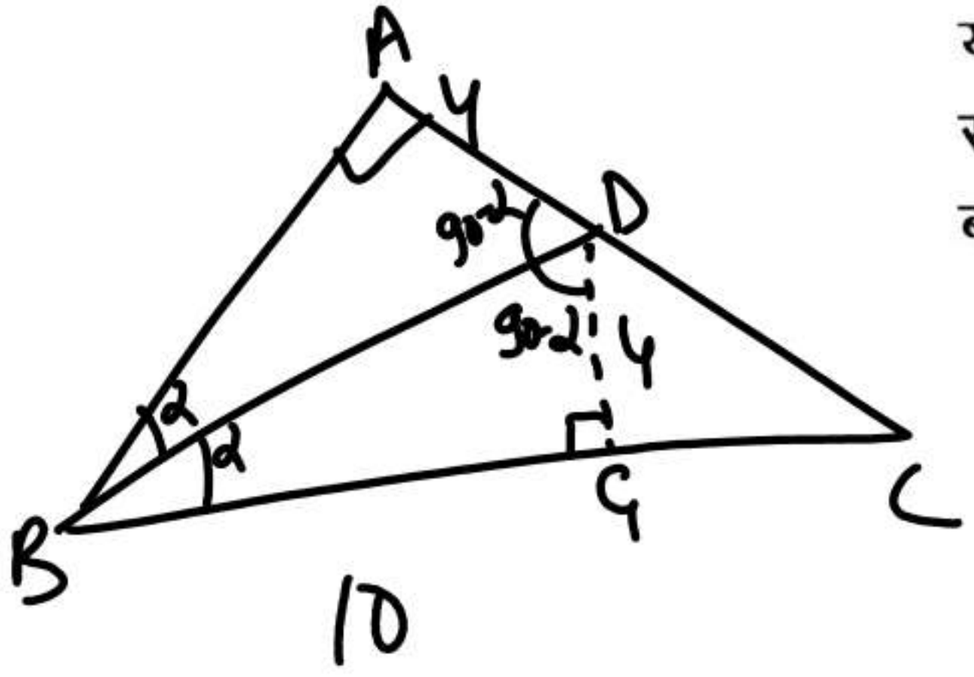


x=15

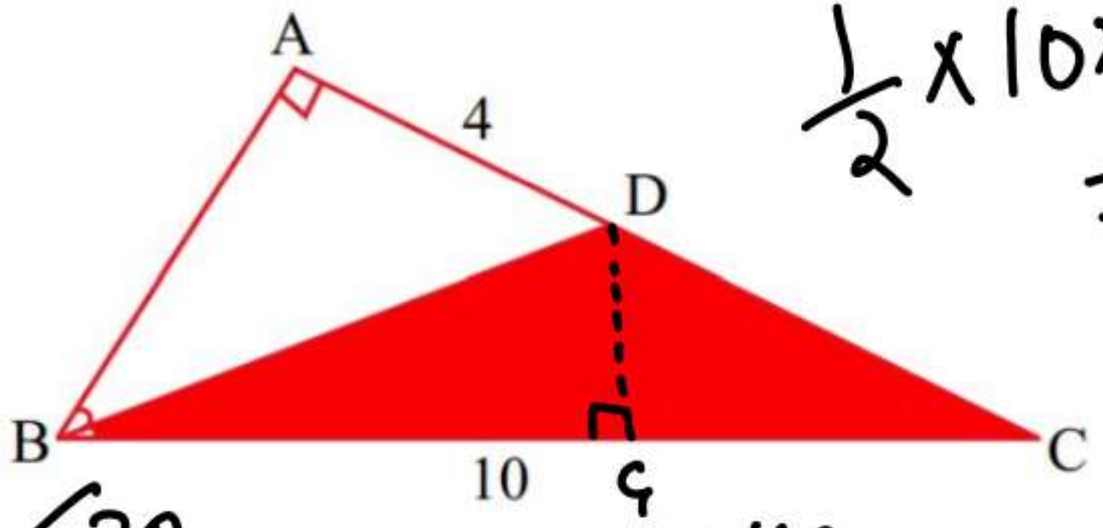
(a) 12
(b) 16
(c) 15
(d) None

If AD = 4, BC = 10, BD is an angle bisector then find the area of shaded region?

यदि **AD = 4, BC = 10** तथा **BD** कोण समद्विभाजक है, तो छायांकित भाग का क्षेत्रफल बताओ?



$\triangle ABD \cong 4BD$



$\frac{1}{2} \times 10 \times 4$

$= 20$

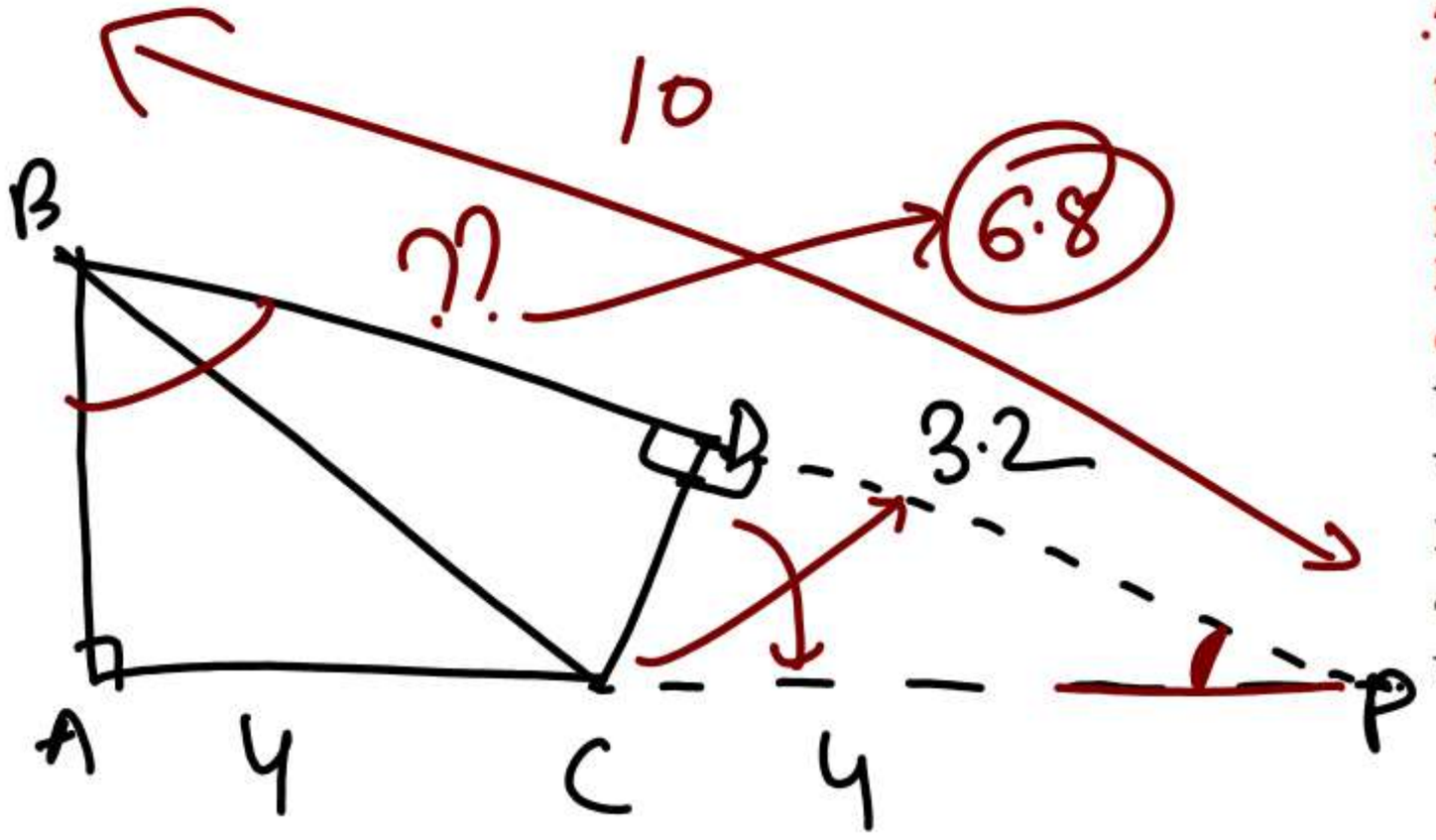
(a) 20

(b) 40

(c) 24

(d) 30

A



.Triangles ABC and DBC are right angled triangles with common hypotenuse BC. BD and AC intersect at P when produced. If PA = 8 cm, PC = 4 cm and PD = 3.2 cm, then the length of BD, in cm is.

त्रिभुज **ABC** और **DBC** उभयनिष्ठ कर्ण **BC** वाले समकोण त्रिभुज है। **BD** और **AC** को बढ़ाने पर वे **P** पर प्रतिच्छेद होती है यदि **PA = 8** सेमी, **PC = 4** सेमी और **PD = 3.2** सेमी है, तो **BD** की लंबाई ज्ञात करें।

D

4→8
5→10

(a) 5.6
(b) 7.2
(c) 6.4
(d) 6.8

Mensuration
Monday

Geometry Finish
6 Classes