بِسْمِ اللهِ الرَّحْمٰنِ الرَّحِيْمِ

বিস্‌মিল্লাহির রাহ্‌মানির রাহীম

উদ্ভাস

একাডেমিক এন্ড এডমিশন কেয়ার

বৃত্ত

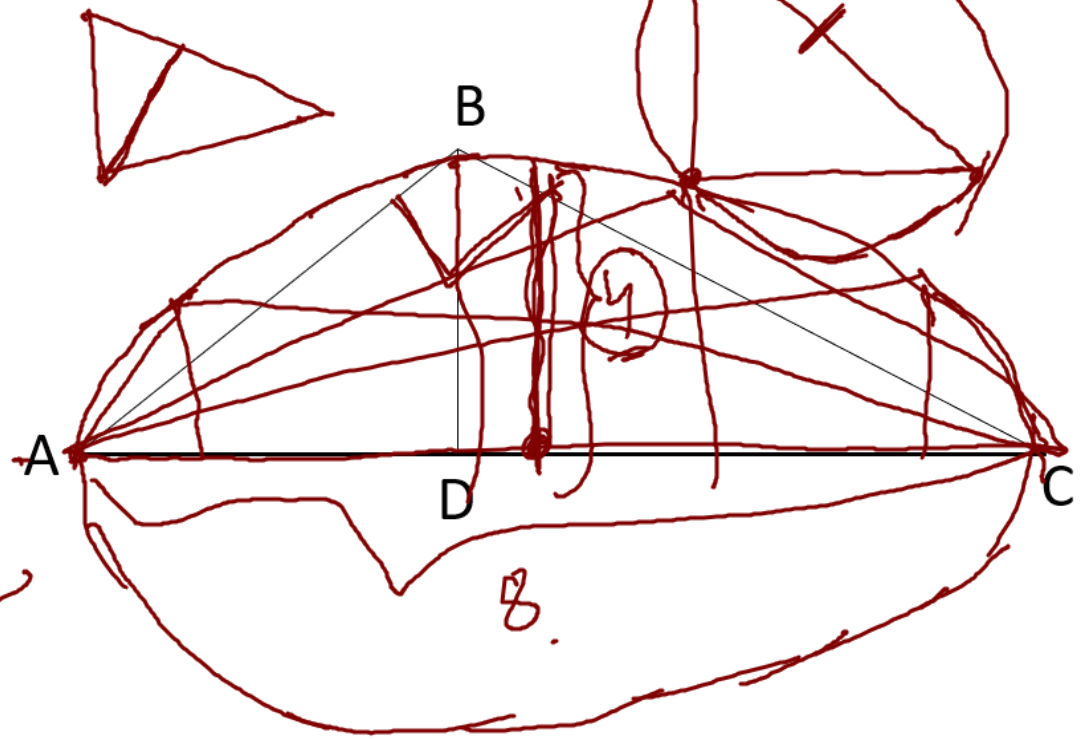
লেকচার : M-21

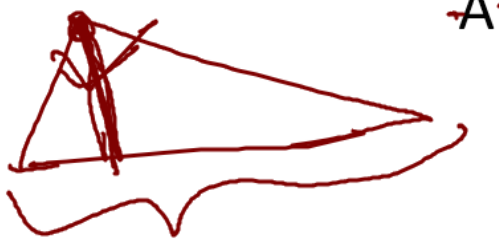
Poll 1

Length of the perpendicular drawn on the hypotenuse (from the vertex opposite to the hypotenuse) can't be greater than half of the hypotenuse.

In triangle ABC , $\angle ABC=90°$,$\angle ADB=90°$,BD=5 cm, AC=8 cm. What is the area of the triangle?

1. 40 sq.c.m
2. 20 sq.c.m
3. 10 sq.c.m
4. None





In triangle ABC , ∠ABC=90°,∠ADB=90°,BD=5 cm, AC=8 cm. What is the area of the triangle?
1. 40
2. 20
3. 10
4. None

Poll 2

What is the area of a triangle having sides' length of 2 cm, 3 cm and 6 cm ?

1. 9 sq.c.m
2. 18 sq.c.m
3. 11 sq.cm
4. None

$2+3=5$

$5<6$,

Poll 3

OA and OC are bisectors of ∠ EAC and ∠ FCA respectively. If ∠ AOC=50°,then ∠ABC=?

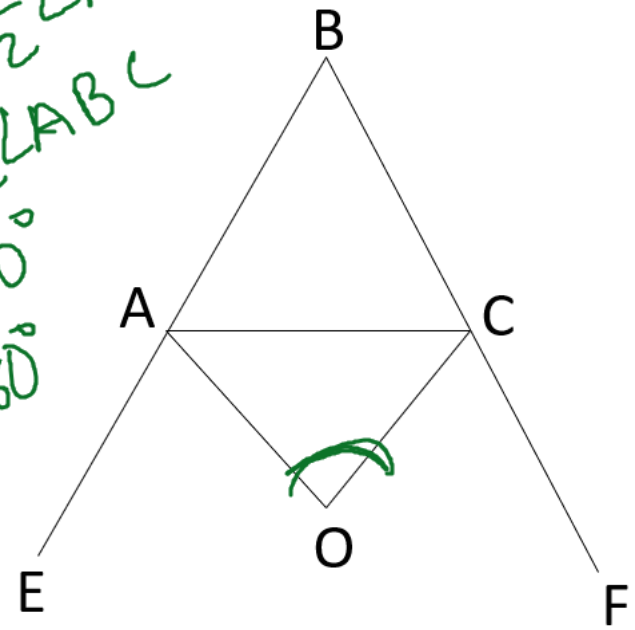
1. 40
2. 130
3. 25
4. 80

$\angle AOC = 90° - \frac{1}{2}\angle ABC$

$50° = 90° - \frac{1}{2}\angle ABC$

$\frac{1}{2}\angle ABC = 40°$

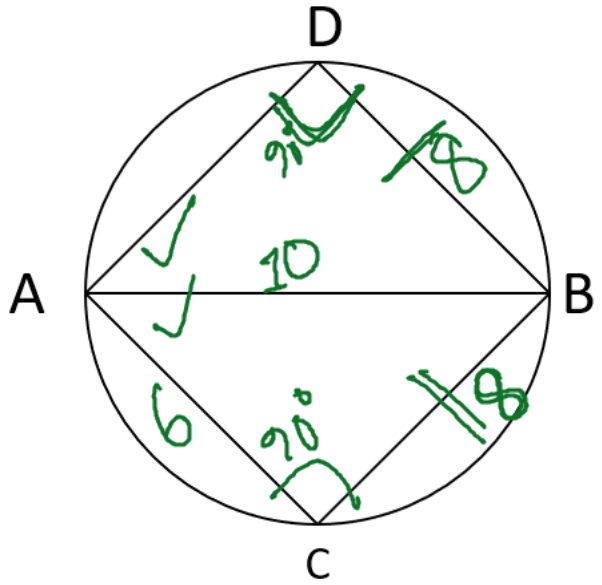
$\angle ABC = 80°$



Poll 4

Here ADBC is an inscribed quadrilateral and AB is the diameter of the circle. ∠BAD=∠BAC. If AC=6cm, AB=10cm. BD=? c.m

1. 8
2. 9
3. 4.5
4. 5



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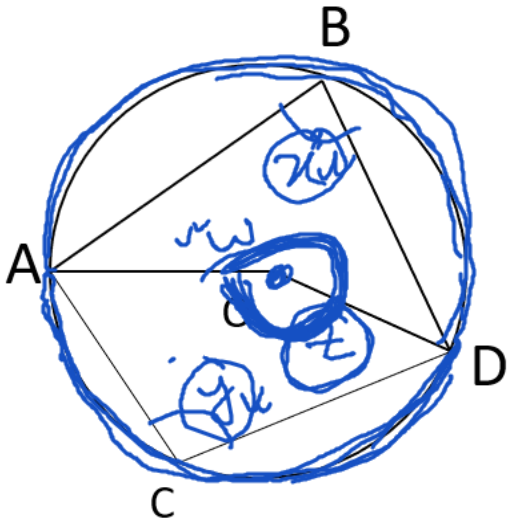
The sum of the two opposite angles of a inscribed quadrilateral is two right angles.



$2x = z$

$2y = w$

$2(x+y) = w+z$

$2(x+y) = 360^\circ$

$x+y = 180^\circ$

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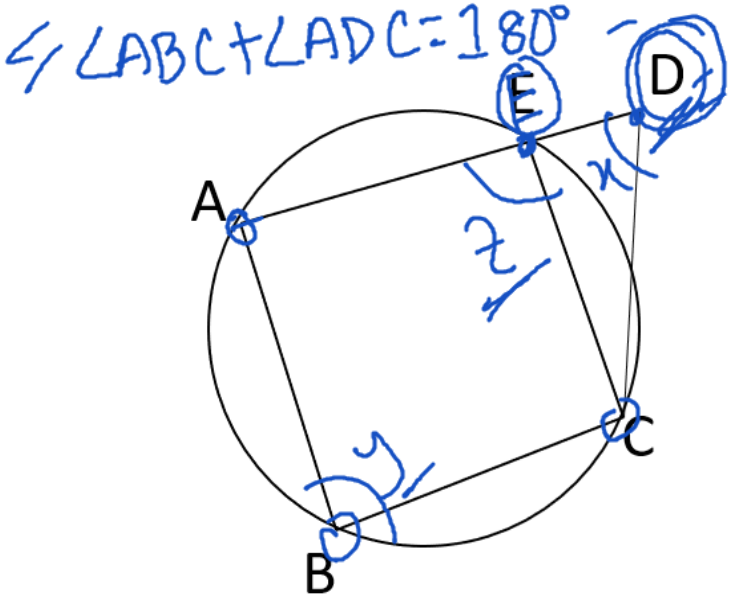
If two opposite angles of a quadrilateral are supplementary, then the four vertices of the quadrilateral are concyclic.



method of contradiction

$x+y=180°$

$y+z=180°$

$x+y=y+z$

$x=z$

$\triangle CED$,

Exterior $\angle z > \angle x$

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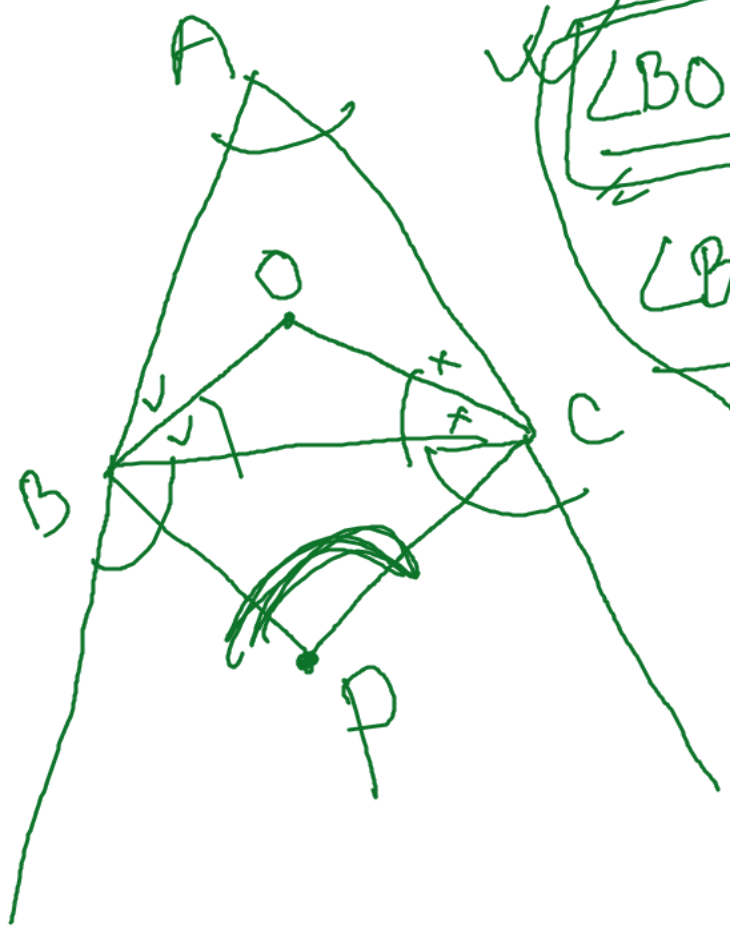

$\angle BOC = 90^\circ + \frac{1}{2}\angle A$

$\angle BPC = 90^\circ - \frac{1}{2}\angle A$

$\angle A + \angle B + \angle C = 180^\circ$

$\frac{1}{2}\angle A + \frac{1}{2}\angle B + \frac{1}{2}\angle C = 90^\circ$

$\frac{1}{2}\angle A + \angle OBC + \angle OCB = 90^\circ$

$\angle BOC + \frac{1}{2}\angle A + \angle OBC + \angle OCB = 90^\circ + \angle BOC$

$180^\circ + \frac{1}{2}\angle A = 90^\circ + \angle BOC$

$90^\circ + \frac{1}{2}\angle A = \angle BOC$

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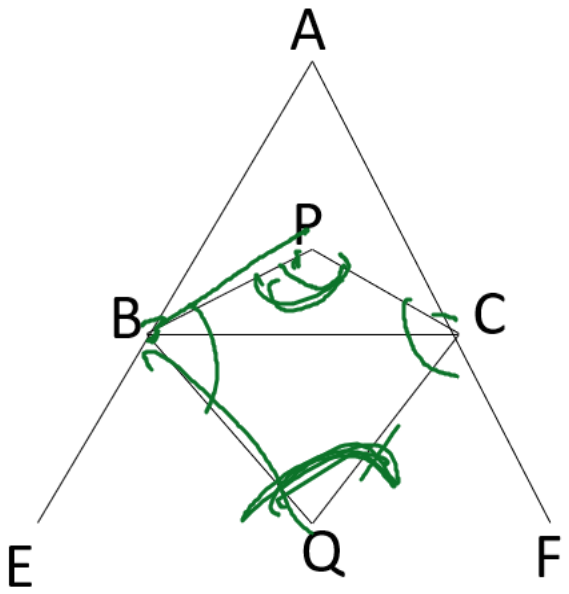
1. If the internal and external bisectors of the angles ∠B and ∠C of triangle ABC meet at points P and Q respectively, then prove that B,P,C,Q are concyclic.



$\angle BPC = 90^\circ + \frac{1}{2}\angle A$

$\angle BQC = 90^\circ - \frac{1}{2}\angle A$

$\angle BPC + \angle BQC = 180^\circ$

$\therefore$ B, P, C, Q are concyclic.

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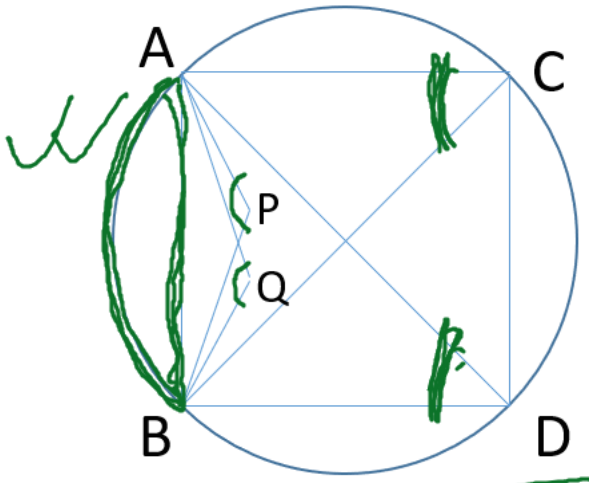
2. ABDC is an inscribed quadrilateral. If the bisectors of ∠CAB and ∠CBA meet at the point P and the bisectors of ∠DBA and ∠DAB meet at point Q , then prove that, the four points A,P,Q,B are concyclic.



$\angle APB = 90° + \frac{1}{2}\angle ACB$

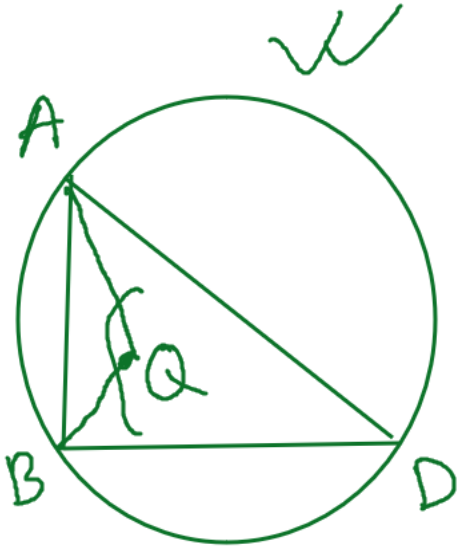
$\therefore \angle APB = 90° + \frac{1}{2}\angle ADB$

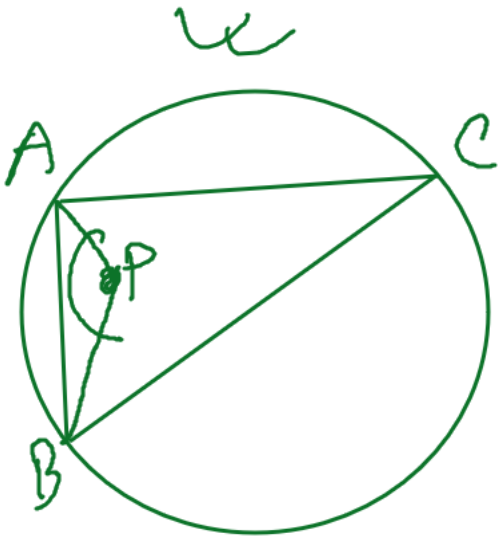
$\angle AQB = 90° + \frac{1}{2}\angle ADB$

$\therefore \angle APB = \angle AQB$

$\angle ACB = \angle ADB$

A, P, Q, B are concyclic





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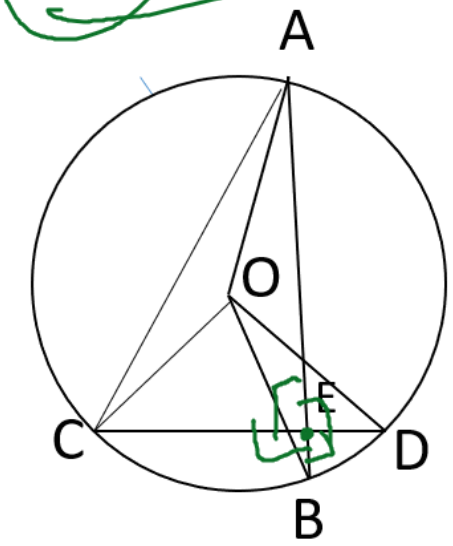
3. The chords AB and CD of a circle with center O meet at right angles at any point inside the circle, prove that ∠ AOD+ ∠ BOC=2right angles.



8·2 ⟶ (1)

2∠AEC
2×90°=180°

∠AEC=∠AED=∠BEC=∠BED=90°

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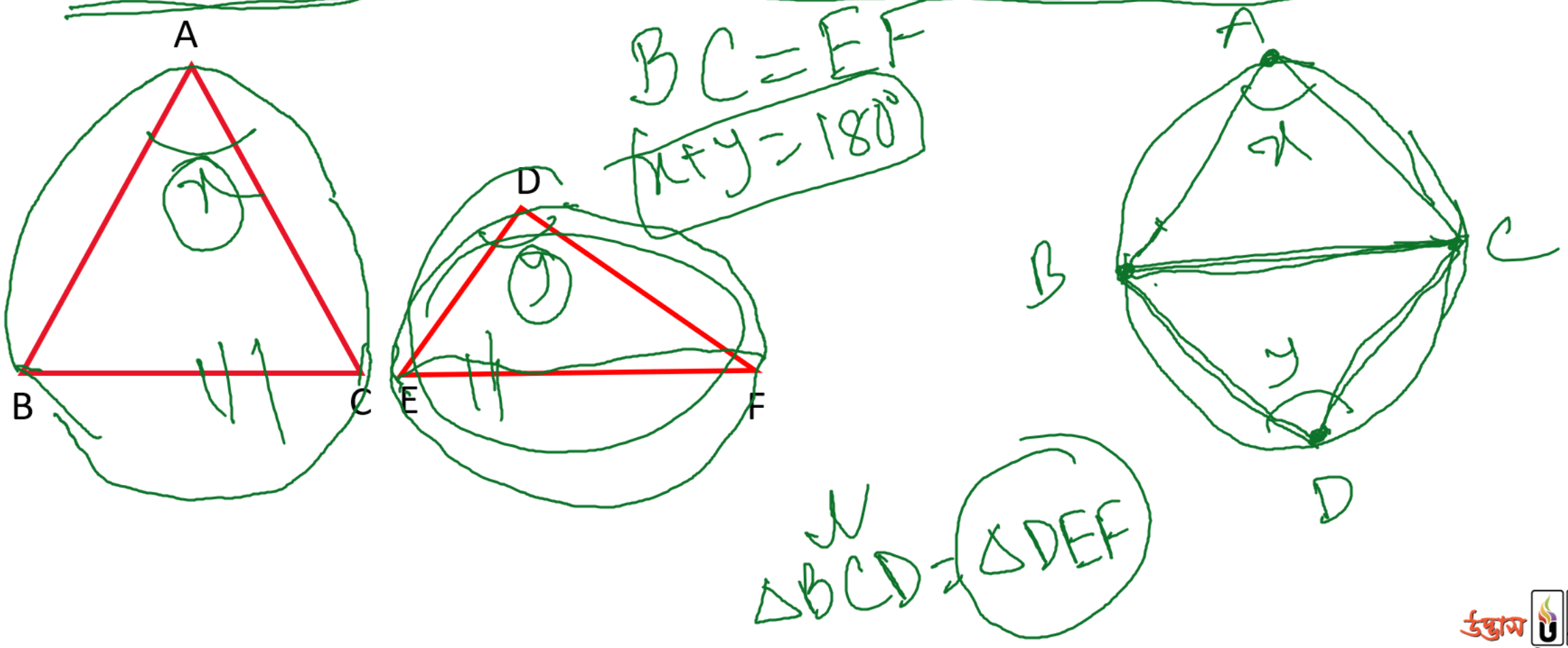
6. If the vertical angles of two triangles standing on equal bases are supplementary, then prove that their circum-circles are equal.



লেগে থাকো সৎভাবে,
স্বপ্ন জয় তোমারই হবে

ঊদ্ভাস-উন্মেষ শিক্ষা পরিবার