

# ASPIRE STUDY MCA Entrance Classes

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## Paper – 1 (Properties of Triangle)

- In a  $\Delta ABC$ , the value of  $a^2(\sin^2 B - \sin^2 C) + b^2(\sin^2 C - \sin^2 A) + c^2(\sin^2 A - \sin^2 B)$  is equal to  
(a)  $2\Sigma a^2 b^2$  (b)  $2(a^2 + b^2 + c^2)$   
(c)  $(a + b + c)^2$  (d) 0
- If the sides of a triangle are  $3 + \sqrt{3}$ ,  $2\sqrt{3}$  and  $\sqrt{6}$ , then the difference of the greatest angle and the least angle is:  
(a)  $60^\circ$  (b)  $75^\circ$   
(c)  $15^\circ$  (d) None of these
- In a  $\Delta ABC$ ,  $\Sigma a(\sin B - \sin C)$  is equal to  
(a)  $a + b + c$  (b)  $a^2 + b^2 + c^2$   
(c) 0 (d) None of these
- If  $a \cos A = b \cos B$ , then the triangle is :  
(a) Equilateral (b) Right Angle  
(c) Isosceles (d) Isosceles or right angled
- If twice the square of the diameter of a circle is equal to half the sum of the squares of the sides of inscribed triangle ABC, then  $\sin^2 A + \sin^2 B + \sin^2 C$  is equal to  
(a) 1 (b) Data is inconsistent  
(c) 4 (d) none of these
- In a  $\Delta ABC$ ,  $b \cos^2 \frac{C}{2} + c \cos^2 \frac{B}{2} = \lambda s$ , where  $2s$  is the perimeter of the  $\Delta$ , then  $\lambda =$   
(a) 1 (b) 2  
(c)  $1/2$  (d) None
- In a  $\Delta ABC$ , for any real angle  $\theta$ ,  $b \cos(C - \theta) + c \cos(B + \theta) =$   
(a)  $a \cos \theta$  (b)  $b \cos \theta$   
(c)  $c \cos \theta$  (d) None of these
- If  $\frac{\sin A}{\sin C} = \frac{\sin(A-B)}{\sin(B-C)}$ , then  $a^2, b^2, c^2$  are in  
(a) AP (b) GP  
(c) HP (d) None of these
- $\Sigma a^3 \cos(B - C) =$   
(a)  $3abc$  (b)  $3(a+b+c)$   
(c)  $abc(a+b+c)$  (d) 0
- In  $\Delta ABC$ ,  $\frac{b^2 \sin 2C + c^2 \sin 2B}{\Delta}$ , where  $\Delta$  is the area of the  $\Delta ABC$ , is equal to  
(a) 1 (b) 2 (c) 3 (d) 4

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Answer Key will be uploaded available in next paper.

MCA Entrance Coaching Classes in Kanpur

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