

APOLLO

Analytical Geometry (Concurrency of straight lines)

FBISE Mathematics Class 12 (HSSC-II)

Domain B: Geometry

19 questions | questions

Original FBISE question crops. National Curriculum 2022-23 topic.

xii.	If $a^2 + b^2 - c^2 + 2ab = 0$, then family of straight lines $ax + by + c = 0$ is concurrent at the points:	$(1, -1)$	$(-1, 1)$	$(1, -2)$	$(1, 1)$
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xiii.	The slope of a line perpendicular to a vertical line is:	0	1	-1	undefined
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Q4	Given the vertices of a triangle A (2,3), B (8,7), and C (4,11): a. Find the equation of the altitude from vertex A. b. Find the equation of the right bisector of side BC. c. Verify that the altitude and the right bisector intersect on the circumcircle of the triangle.	8
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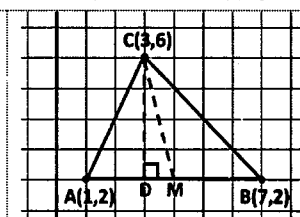
OR	Find the equation of line passing through the point of intersection of lines $x + y = 3$ $x - y = 1$ and parallel to line $x - 3y = 2$ and write it into slope intercept form.	3+1
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	a. $\frac{\partial f}{\partial x}$ b. $\frac{\partial f}{\partial y}$
(xii)	Compute four iterations of the function $f(x) = 2x^3 - 5$ in the interval $[0, 2]$ by using Bisection method

SEC7

Note: Solve the following Questions.

Q.3	The growth of bacteria is given by the function of time (t) (in hours) $f(t) = 500e^{0.25t}$, then find: a. Initial number of Bacteria at $t=0$ b. Number of Bacteria after $t = 4$ hours c. Number of Bacteria after $t = 8$ hours d. The time if number of Bacteria is $500e^3$. e. Is $f(t)$ continuous at $t = 4$ hours and $t = 8$ hours?
Q.4	In the given $\triangle ABC$ find equation of: a. Median $\overline{CM}$ b. Altitude $\overline{CD}$ c. Right bisector of $\overline{AB}$ at mid-point, M



OR	Find the equation of line passing through the point of intersection of lines $x + 2y = 5$ and $x - 2y = 1$ and parallel to line $x - 2y = 3$ and write it into slope intercept form.	04
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(xii)	Compute four iterations of the function $f(x) = 2x^3 - 7$ in the interval $[0, 2]$ by using Bisection method.	
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SECTION**Note: Solve the following Questions.**

Q.3	The growth of a virus is the function of time t (in hours) $f(t) = 200e^{0.5t}$, then find: a. Initial number of virus at $t = 0$ b. Number of virus after $t = 2$ hours c. Number of virus after $t = 4$ hours d. The time when number of virus is $200e^4$. e. Is $f(t)$ continuous at $t = 2$ hours and $t = 4$ hours.	
Q.4	In the given $\triangle ABC$ find equation of: a. Median $\overline{CM}$ b. Altitude $\overline{CD}$ c. Right bisector of $\overline{AB}$ at mid-point M	

(viii)	Reduce the equation $6x + 8y - 48 = 0$ to slope intercept form, two intercepts form and normal form.	04
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Q.6	Find equations of medians of a triangle whose vertices are $A(2,3)$, $B(6,7)$ and $C(4,1)$.	08
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	Find the equation of the median drawn from vertex $A(2,4)$ to the side joining $B(6,2)$ and $C(4,-2)$.	04
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Q.5	For the triangle with vertices $A(0,0)$, $B(4,0)$, $C(0,6)$, verify that the three medians are concurrent. Find the point of concurrency (centroid).	08
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First Annual 2026 | Section B Q2(vii) OR | 4 marks

Find the equation of the perpendicular (right) bisector of the side joining the points $M(-2, 6)$ and $N(4, 2)$.	04
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First Annual 2026 | Section C Q5 | 8 marks

For the triangle with vertices $A(1,1), B(9,1), C(1,9)$, verify that the three right bisectors are concurrent.	08
Q.5 Find the point of concurrency (circumcenter).	

First Annual 2025 | Section B Q2(vii) OR | 4 marks

$3x - 4y - 3 = 0$ Show that the lines $5x + 12y + 1 = 0$ are concurrent. $32x + 4y - 17 = 0$	04
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First Annual 2026 | Section A Q4 | 1 mark

In a triangle with vertices $A(1,2), B(3,4), C(5,0)$, the median from vertex A passes through:	(4, 3)	(2, 3)	(3, 2)	(4, 2)
The system of linear equations	infinite	a unique		

First Annual 2026 | Section C Q6 | 8 marks

Find the coordinates of the centre of the circumcircle of a triangle with vertices $A(2,3), B(6,7)$, and $C(8,3)$.
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First Annual 2026 | Section C Q6 | 8 marks

Find equations of medians of a triangle whose vertices are $A(2,3), B(6,7)$ and $C(4,1)$.	08
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FBISE model paper | Section A Q1(xii) | 1 mark

xii.	The three lines defined by the equations $x + 2y = 0, 2x + y = 0, 3x + 5y = 0$ are:	sides of a triangle	Perpendicular	concurrent	parallel
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FBISE model paper | Section C Q4 | 8 marks

Q4	(a) $A(5,1), B(3, -5)$ and $C(-3,7)$ are the vertices of triangle ABC. Find equations of medians of triangle ABC. (b) Show that medians of triangle ABC are concurrent.	8
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