



CLUES:

1. All students are located at integral coordinates in the xy -plane. The x -coordinates belong to the set $\{-2, -1, 0, 1, 2\}$, and the y -coordinates belong to the set $\{-1, 0, 1, 2, 3\}$.
2. Abel is seated on the line which is normal to the curve $f(x) = x^2 - 2x + 4$ at the point $(1, 3)$.
3. Brahmagupta sits on the line normal to the curve $y = x^5 - x^4 + 1$ at $x = 1$.
4. Cantor is located on the line tangent to the curve $y = -x^2 + 10x - 25$ at the point $(5, 0)$.
5. Descartes is seated on the line normal to $y = -x - x^2$ at $x = -1$.
6. Euclid sits on the line tangent to $y = x^3 + x^2$ at $(3, 36)$.
7. Fermat is located on the line tangent to $y = \sqrt{x^2 + 5}$ at the point $(-2, 3)$.
8. The curve $y = ax^2 + bx + c$ passes through the point $(2, 4)$ and is tangent to the line $y = x + 1$ at $(0, 1)$. Determine values for a , b , and c . Gauss sits at the point $(-b - c, 4a)$.
9. Hardy sits at one of the points on the curve $y = 2x^3 - 3x^2 - 12x + 20$ where the tangent is parallel to the x -axis.
10. Jacobi is seated on the line tangent to the graph of $y = 2x^3 - 3x^2 - 12x + 21$ at $x = 2$.
11. Klein is located on the tangent line to $y = 3x^2 - x$ at $x = 1$.
12. Leibniz sits on the line which is tangent to the curve $y = 4x^2 - 22x + 35$ at the point $(3, 5)$.
13. Mandelbrot sits at the point on the curve $y = (x + 2)^2$ where the normal to that curve is parallel to the y -axis.
14. Newton's seat is collinear with those of Gauss and Cantor.
15. Determine the values of a , b , and c where the curves $y = x^2 + ax + b$ and $y = cx + x^2$ have a common tangent line at $(-1, 0)$. Pythagoras sits at the point $(b, a + c)$.
16. Riemann sits on the line normal to the curve $y = x^2 - 3x + 2$ at $x = 1$.
17. The line tangent to a curve at a point (x_1, y_1) is $y = 2x - 2$. The normal to that curve at the same point passes through $(11, -5)$. Taylor sits at the point (x_1, y_1) .

18. Venn's seat is collinear with those of Brahmagupta and Zeno.
 19. Wallis is seated on the line tangent to $y = 4 - 3x - x^2$ at the point (2, -6).
 20. Zeno is located on the line tangent to $y = \frac{2x+5}{x^2-3}$ at $x = 1$.

CLUE Worksheet

For each problem, write down all possible answers from the given domain and range.

NAME	CLUE	Possible Ordered Pairs for the Seat				
	1	██████████	██████████	██████████	██████████	██████████
Abel	2	(1, -1)	(1, 0)	(1, 1)	(1, 2)	(1, 3)
Brahmagupta	3	(-1, 3)	(0, 2)	(1, 1)	(2, 0)	██████████
Cantor	4	(-1, 0)	(-2, 0)	(0, 0)	(1, 0)	(2, 0)
Descartes	5	(-1, 0)	(0, -1)	(-2, 1)	██████████	██████████
Euclid	6	(2, 3)	██████████	██████████	██████████	██████████
Fermat	7	(1, 1)	(-2, 3)	██████████	██████████	██████████
Gauss	8	(-2, 1)	██████████	██████████	██████████	██████████
Hardy	9	(2, 0)	██████████	██████████	██████████	██████████
Jacobi	10	(-2, 1)	(-1, 1)	(0, 1)	(1, 1)	(2, 1)
Klein	11	(1, 2)	██████████	██████████	██████████	██████████
Leibniz	12	(1, 1)	(0, -1)	(2, 3)	██████████	██████████
Mandelbrot	13	(-2, 0)	██████████	██████████	██████████	██████████
Newton	14	(2, -1)	(0, -1)	██████████	██████████	██████████
Pythagoras	15	(0, 2)	██████████	██████████	██████████	██████████
Riemann	16	(0, -1)	(1, 0)	(2, 1)	██████████	██████████
Taylor	17	(1, 0)	██████████	██████████	██████████	██████████
Venn	18	(1, -1)	██████████	██████████	██████████	██████████
Wallis	19	(1, 1)	██████████	██████████	██████████	██████████
Zeno	20	(0, 1)	██████████	██████████	██████████	██████████