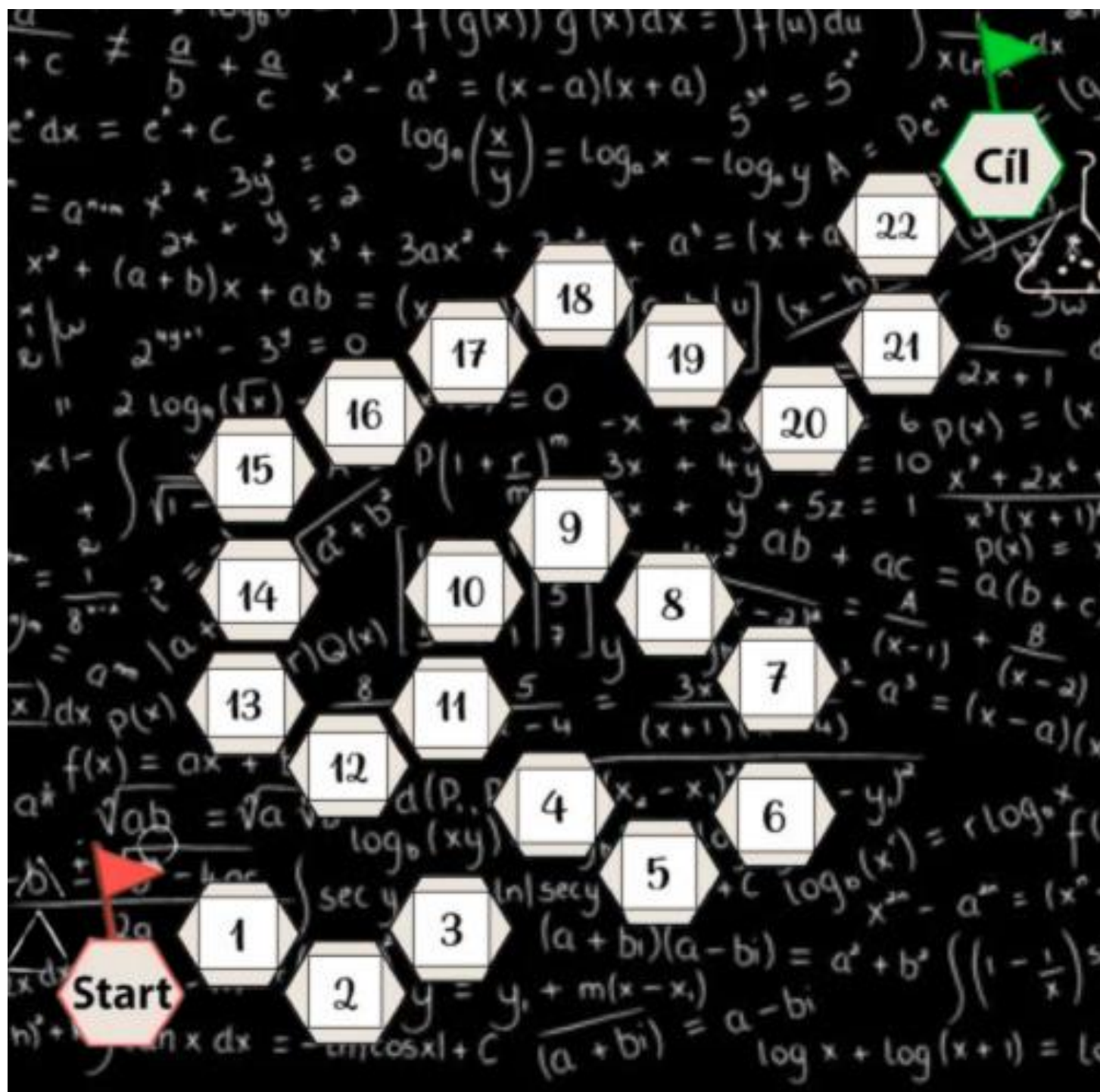




1	13	2
3	15	4
5	17	6

7	19	8
9	21	10
11	14	12

16	22	
18		
20		

1 $\log_5(x^2 + 2x) = \log_5(-3x)$	13 $\frac{\log(2x + 13)}{\log(x + 5)} = 2$	2 $\log_{0,1}(x^2 - 5x) = \log_{0,1}(5x + 11)$
3 $\log_{0,2}(x - 3) > \log_{0,2} x - \log_{0,2} 2$	15 $\log_2(x + 7) - \log_2 x = 3$	4 $\log_6(x + 1) + \log_6 x = 1$
5 $\log_{\frac{1}{7}} x + \frac{1}{\log_{\frac{1}{7}} x} = -2$	17 $\log_2(3x + 4) = 4$	6 $\log_{\frac{4}{7}}(4x^2 + 3x) > 0$

$$\begin{aligned}x_1 &= -1 \\x_2 &= 11\end{aligned}$$

$$x = -2$$

$$x = -5$$

$$x = 2$$

$$x = 1$$

$$x \in (3, 6)$$

$$x \in \left(-1, -\frac{3}{4}\right) \cup \left(0, \frac{1}{4}\right)$$

$$x = 4$$

$$x = 7$$

7 $\log_2 \frac{3-x}{x+3} = -2$	19 $\log_3 \frac{6x-2}{x-3} = 2$	8 $\frac{\log(2x+10)}{2} = \log(x+1)$
9 $\log_2(-x+1) - \log_2 2 = 0$	21 $(\log_{\frac{1}{2}} x)^2 + \log_{\frac{1}{2}} x - 2 \leq 0$	10 $\log(99x+100) - \log(x-1) = 2$
11 $\log_5(x^2 - 2x + 1) \geq 0$	14 $\log_5(3x-1) < 1$	12 $\log_2(4x+1) - \log_2(x-1) = 3$

$$x = 3$$

$$x = \frac{25}{3}$$

$$x = \frac{9}{5}$$

$$x = 200$$

$$x \in \langle \frac{1}{2}, 4 \rangle$$

$$x = -1$$

$$x = \frac{9}{4}$$

$$x \in \left(\frac{1}{3}, 2 \right)$$

$$x \in (-\infty, 0) \cup \langle 2, \infty)$$

16 $\frac{\log x}{\log(5x - 3)} = 1$	22 $\log_6(4x + 8) = 2$	
18 $\log_3(x + 4) \leq 4$		
20 $\log_2(2x) + \log_2(4x) = -3$		

	$x = 7$	$x = \frac{3}{4}$
		$x \in (-4, 77\rangle$
		$x = \frac{1}{8}$