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Name :

CONGRUENCES in $\mathbb{Z}$

Definition and operations in $\mathbb{Z}/n\mathbb{Z}$

I. Complete the ADDITION and MULTIPLICATION tables below in $\mathbb{Z}/6\mathbb{Z}$

+	0	1	2	3	4	5
0						
1						
2						
3						
4						
5						

⊗	0	1	2	3	4	5
0						
1						
2						
3						
4						
5						

II. Complete the ADDITION and MULTIPLICATION tables below in $\mathbb{Z}/5\mathbb{Z}$

+	0	1	2	3	4
0					
1					
2					
3					
4					

⊗	0	1	2	3	4
0					
1					
2					
3					
4					

III. Solve the following equation in $\mathbb{Z}/6\mathbb{Z}$:

1. $x^2 = 0$

2. $x^2 = x$

3. $3x = 0$

4. $\begin{cases} \dot{2}x - \dot{4}y = \dot{2} \\ x - \dot{5}y = \dot{2} \end{cases}$