

Elementary Division Solutions

1. Boolean Algebra

$\text{NOT } (3 + 5 > 7) \text{ OR } (4 / 2 \geq 2 \text{ AND } 7 * 3 < 25)$
 $\text{NOT FALSE OR (TRUE AND FALSE)}$
 TRUE OR FALSE
 TRUE

1. TRUE

2. Boolean Algebra

1	2	3	4	5	6	7
A	B	A OR B	NOT (A OR B)	4 AND 2	NOT A	5 AND 6
0	0	0	1	0	1	0
0	1	1	0	0	1	0
1	0	1	0	0	0	0
1	1	1	0	0	0	0

2. 4

3. Boolean Algebra

1	2	3	4	5	6	7
A	B	$\sim A$	$\sim B$	$3 * 4$	$1 * 2$	$5 + 6$
0	0	1	1	1	0	1
0	1	1	0	0	0	0
1	0	0	1	0	0	0
1	1	0	0	0	1	1

3. (0,0) and (1,1)

4. Boolean Algebra

$$\begin{aligned}
 \sim(A + B) + \sim(A + \sim B) &= \sim(\sim A) * \sim B + \sim A * \sim(\sim B) \\
 &= \sim A * \sim B + \sim A * B = \sim A * (\sim B + B) = \sim A * (1) = \sim A
 \end{aligned}$$

4. $\sim A$ **5. Boolean Algebra**

$$\begin{aligned}
 \sim A + B * \sim A + \sim B * A + \sim B &= \sim A * (1 + B) + \sim B * (A + 1) \\
 &= \sim A * 1 + \sim B * 1 = \sim A + \sim B
 \end{aligned}$$

5. $\sim A + \sim B$