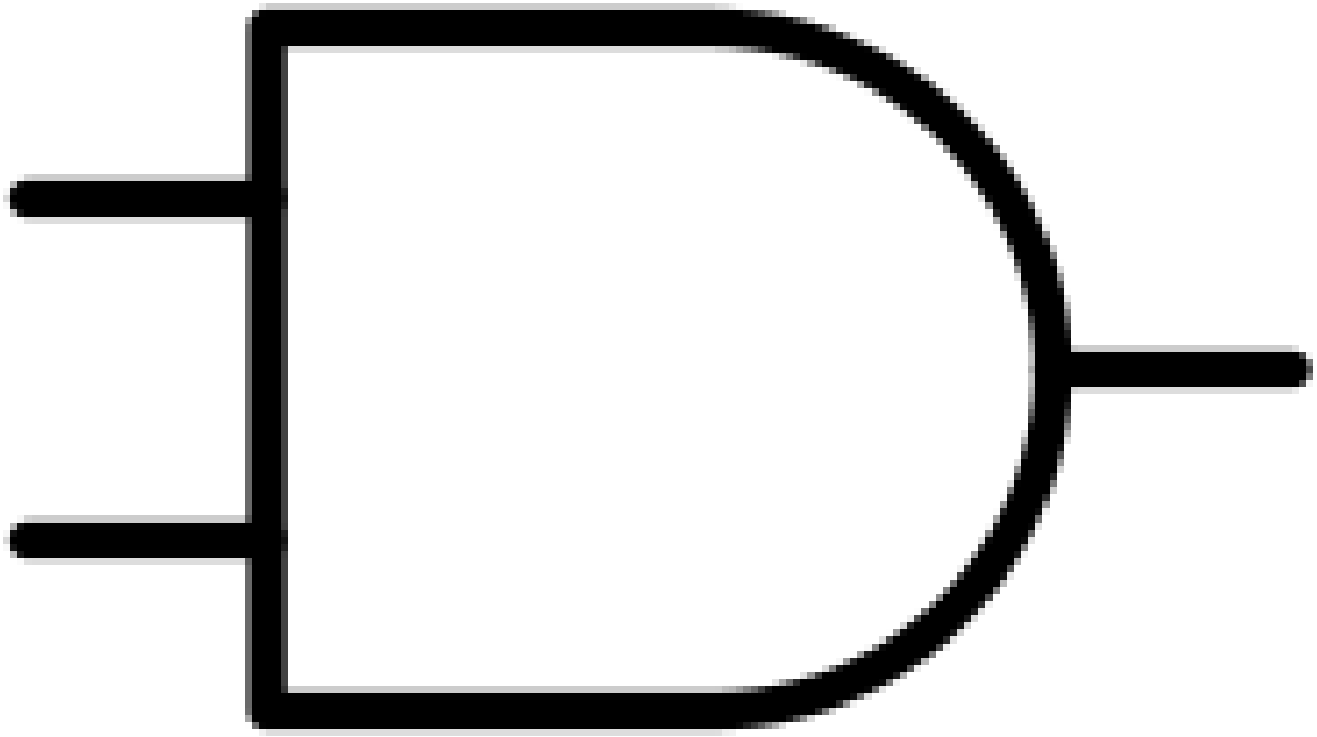
## Question 1:

What is the output of the AND gate with inputs 0, 1?

Options:

1. 1

2. 0



Correct Answer: 0

Question 2:

Are these two circuits equivalent?

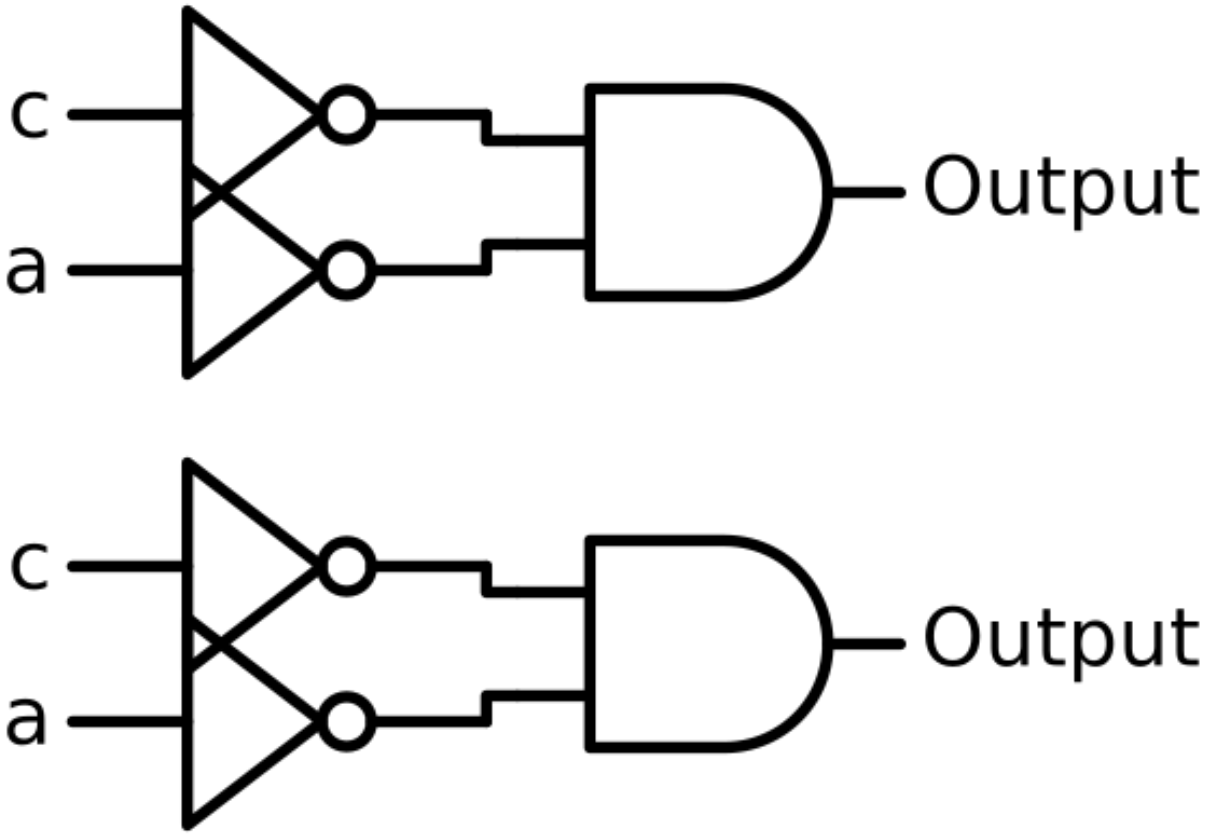
Expression 1: (not ((not c) nand (not a)))

Expression 2: (not ((not c) nand (not a)))

Options:

1. Yes

2. No




Correct Answer: yes

Question 3:

Are these two circuits equivalent?

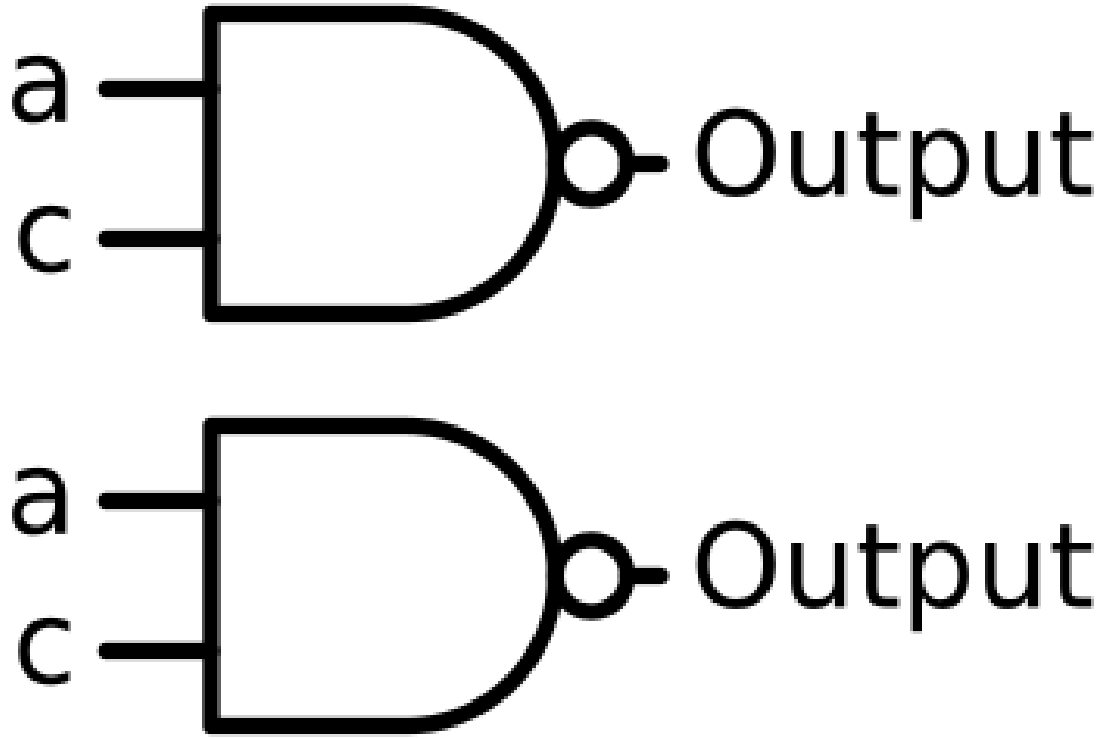
Expression 1: (a nand c)

Expression 2: (a nand c)

Options:

1. Yes

2. No




Correct Answer: yes

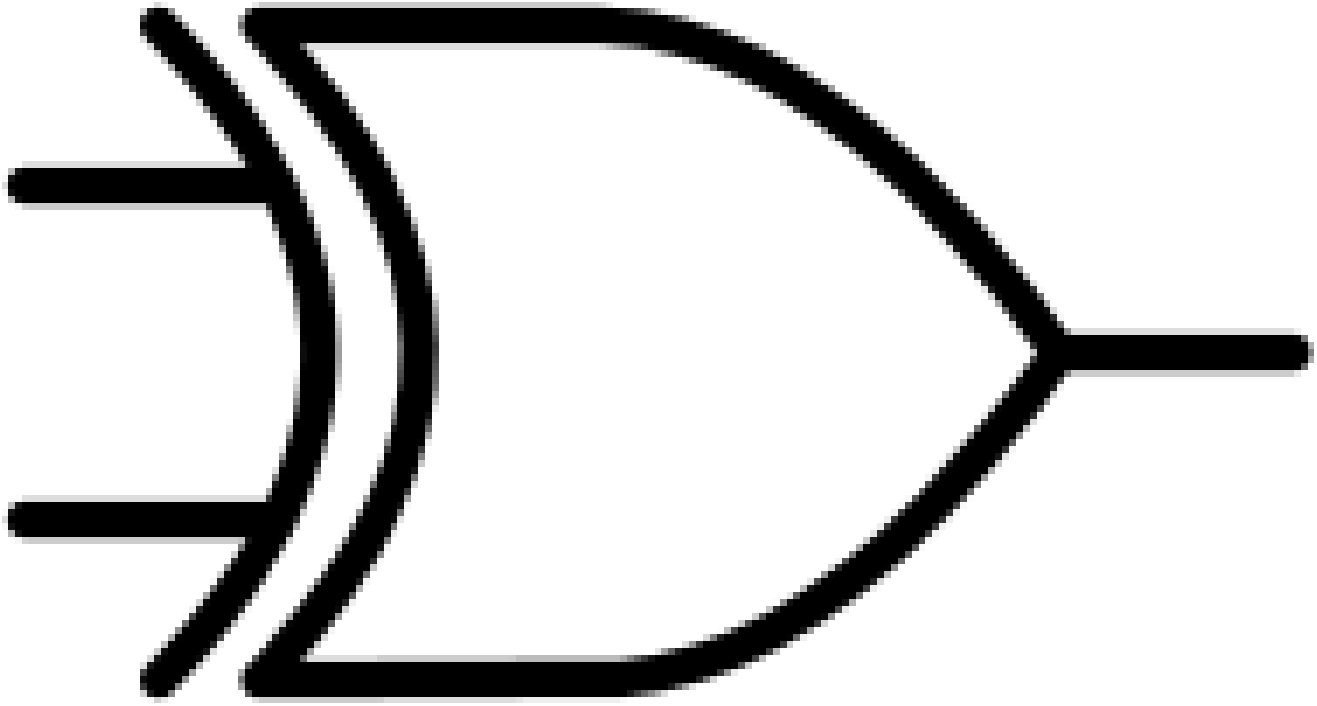
## Question 4:

What is the output of the XOR gate with inputs 1, 1?

Options:

1. 0

2. 1



Correct Answer: 0

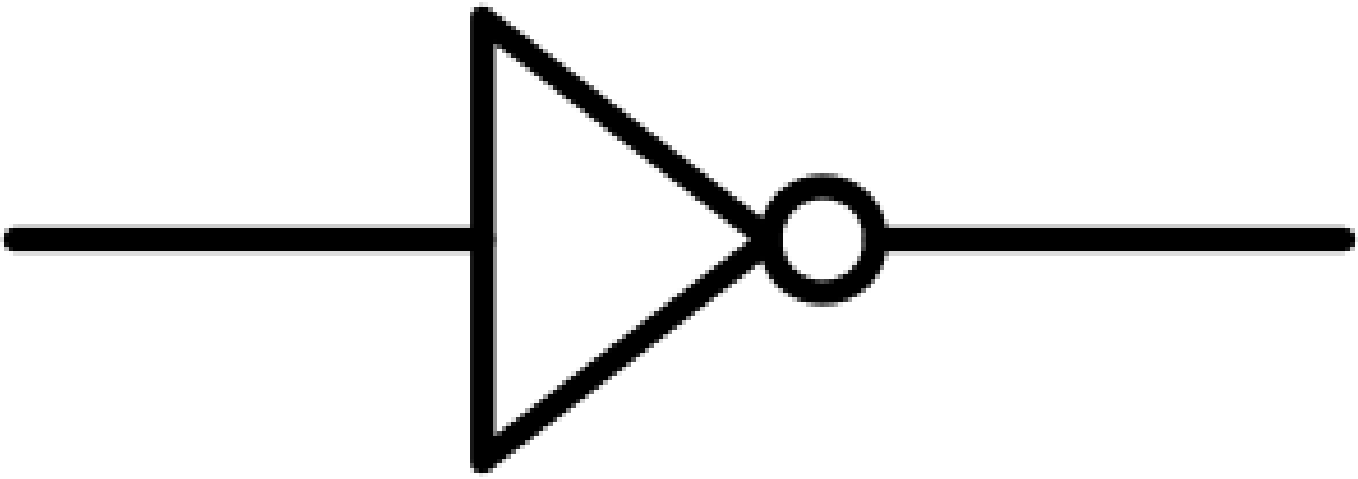
## Question 5:

What is the output of the NOT gate with input 0?

Options:

1. 1

2. 0



Correct Answer: 1

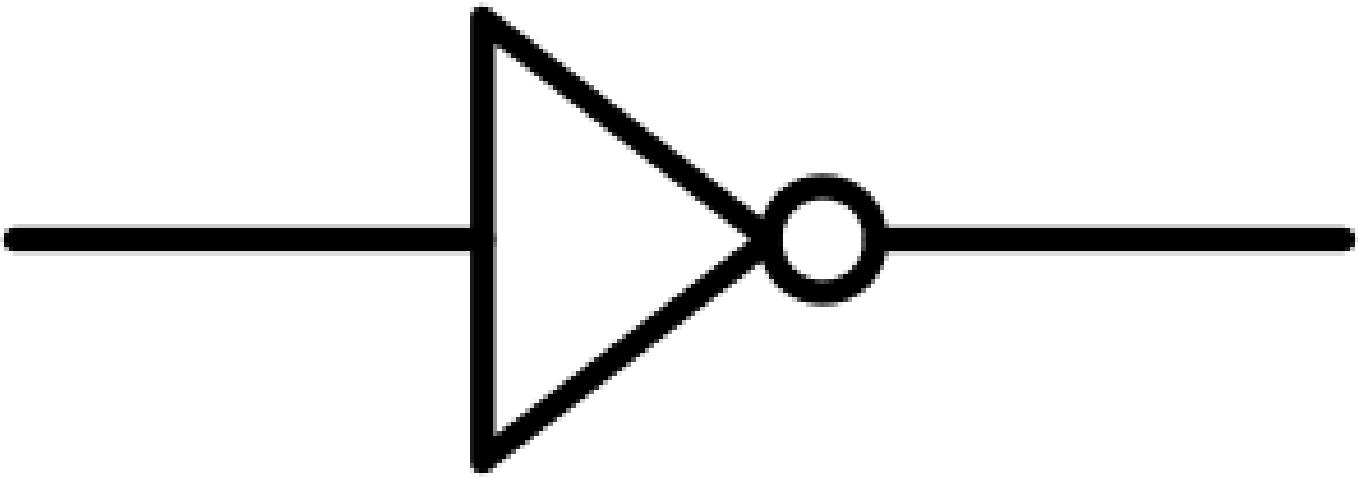
## Question 6:

What is the output of the NOT gate with input 1?

Options:

1. 1

2. 0



Correct Answer: 0

Question 7:

Are these two circuits equivalent?

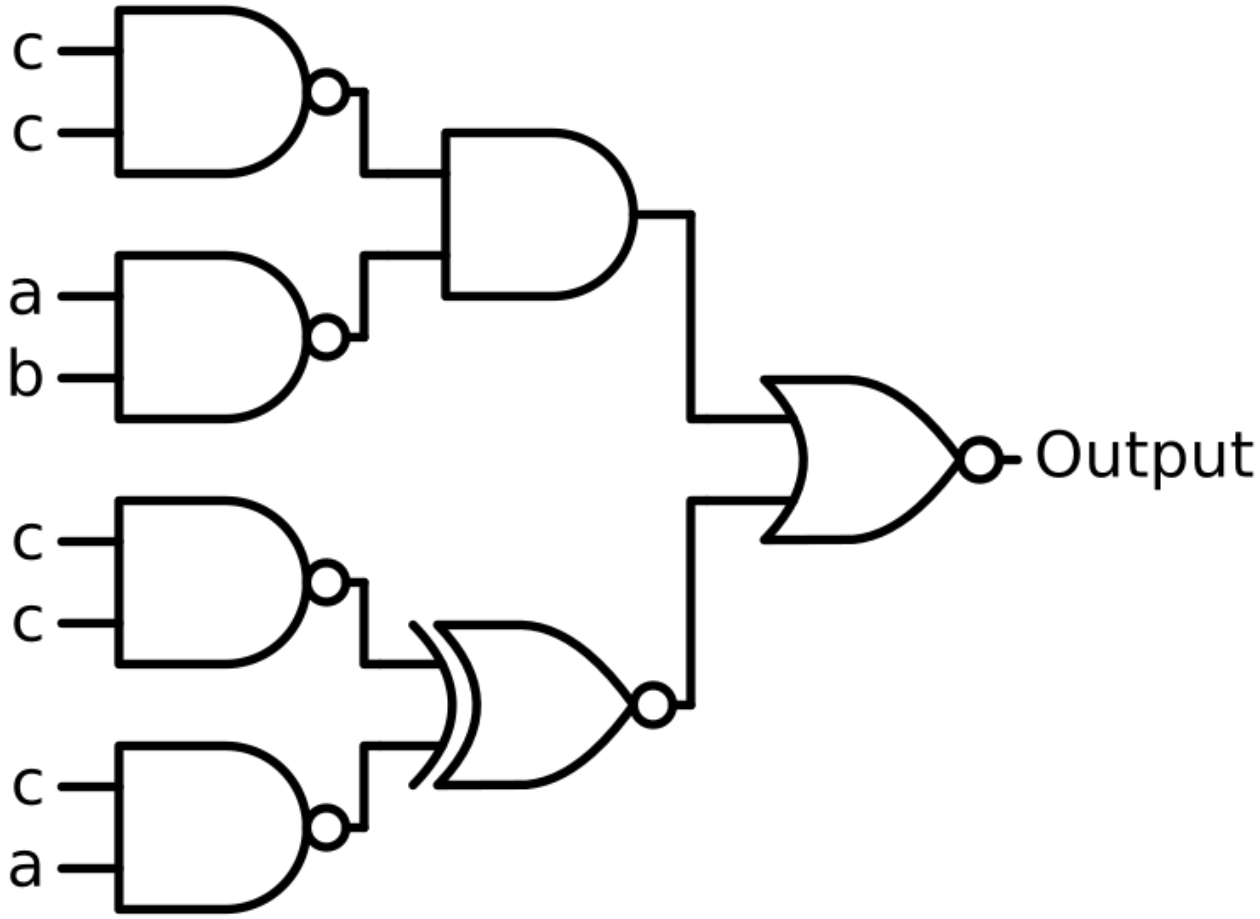
Expression 1: (((c nand c) and (a nand b)) nor ((c nand c) xnor (c nand a)))

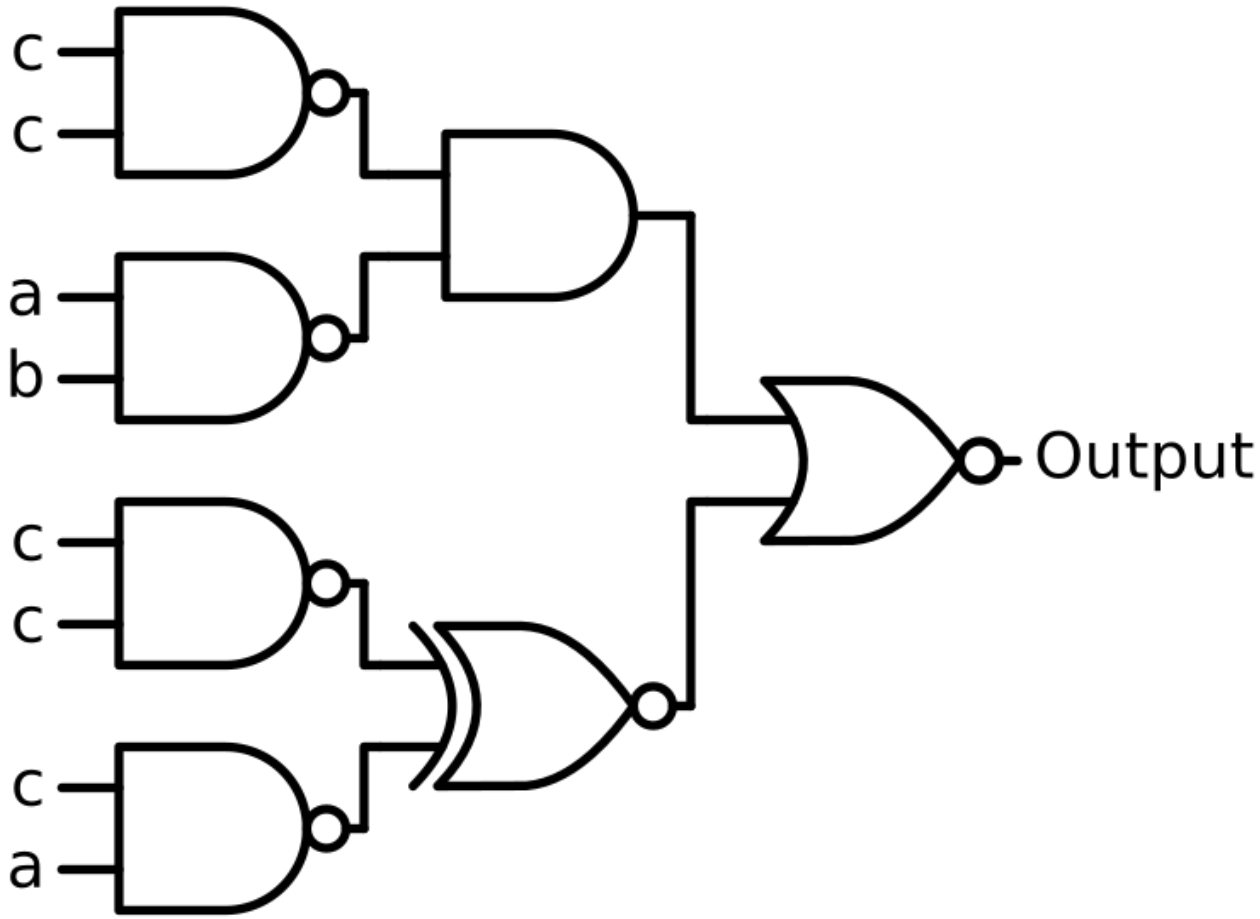
Expression 2: (((c nand c) and (a nand b)) nor ((c nand c) xnor (c nand a)))

Options:

1. Yes

2. No






Correct Answer: yes

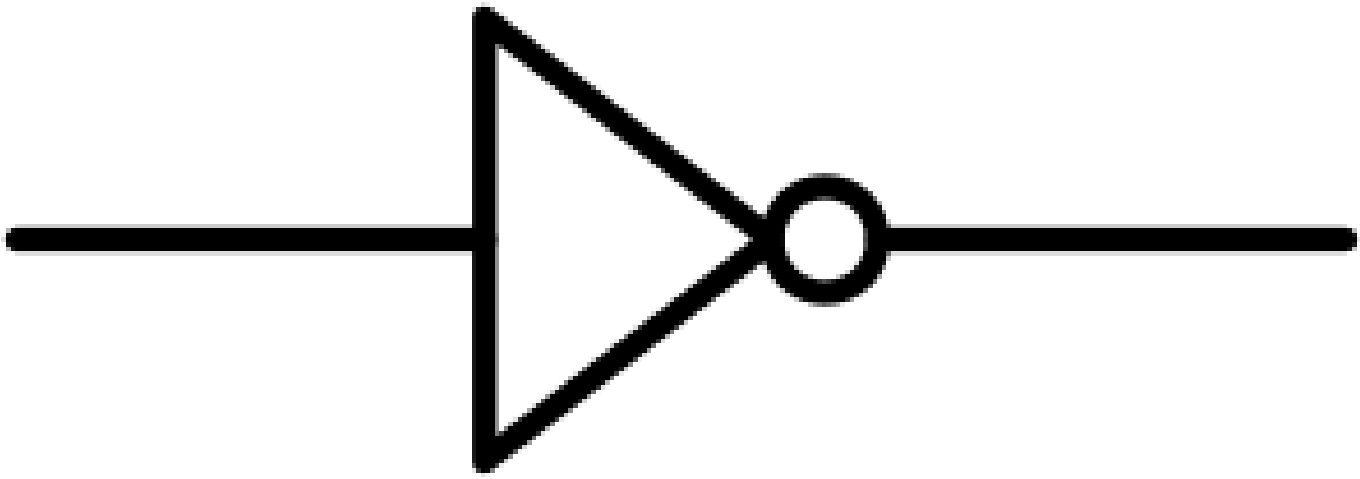
## Question 8:

What is the output of the NOT gate with input 1?

Options:

1. 0

2. 1



Correct Answer: 0

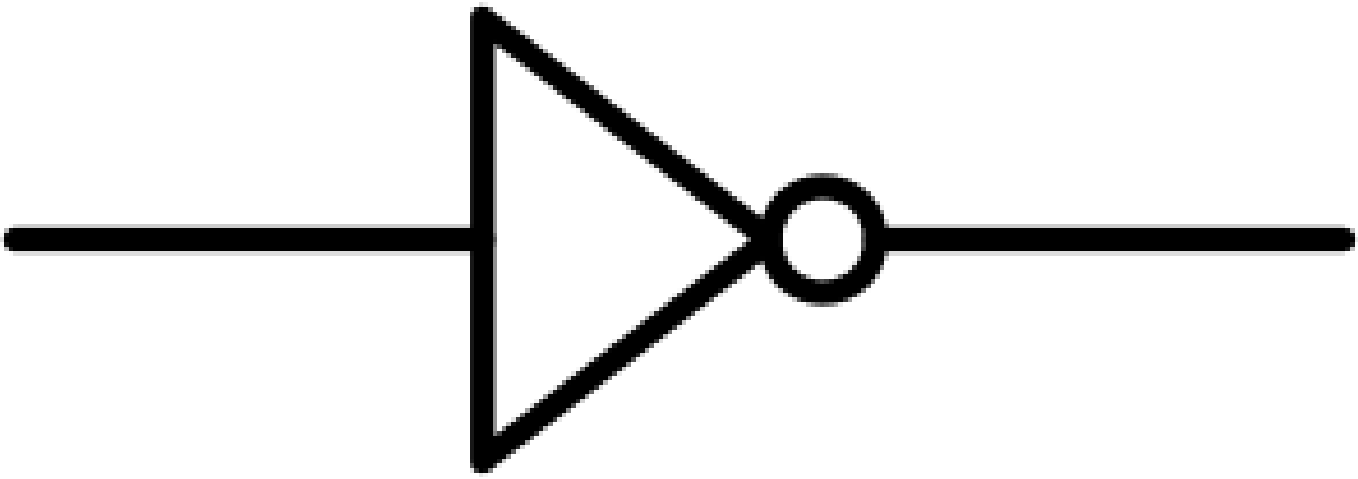
## Question 9:

What is the output of the NOT gate with input 1?

Options:

1. 0

2. 1



Correct Answer: 0

Question 10:

Are these two circuits equivalent?

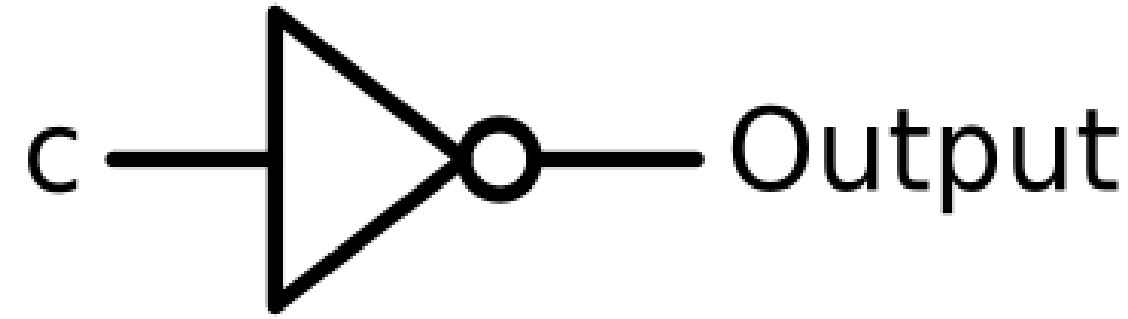
Expression 1: (not c)

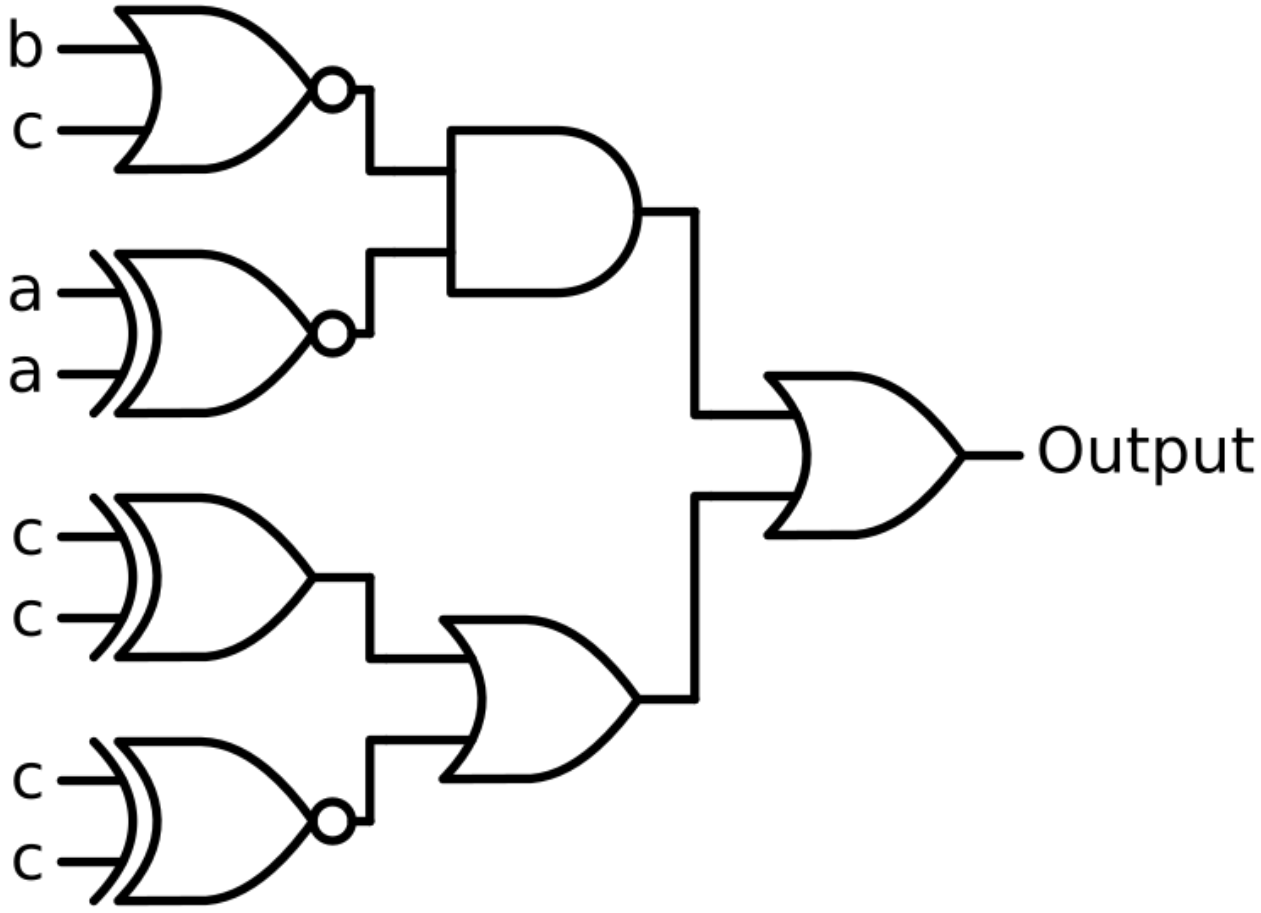
Expression 2: (((b nor c) and (a xnor a)) or ((c xor c) or (c xnor c)))

Options:

1. Yes

2. No




Correct Answer: no

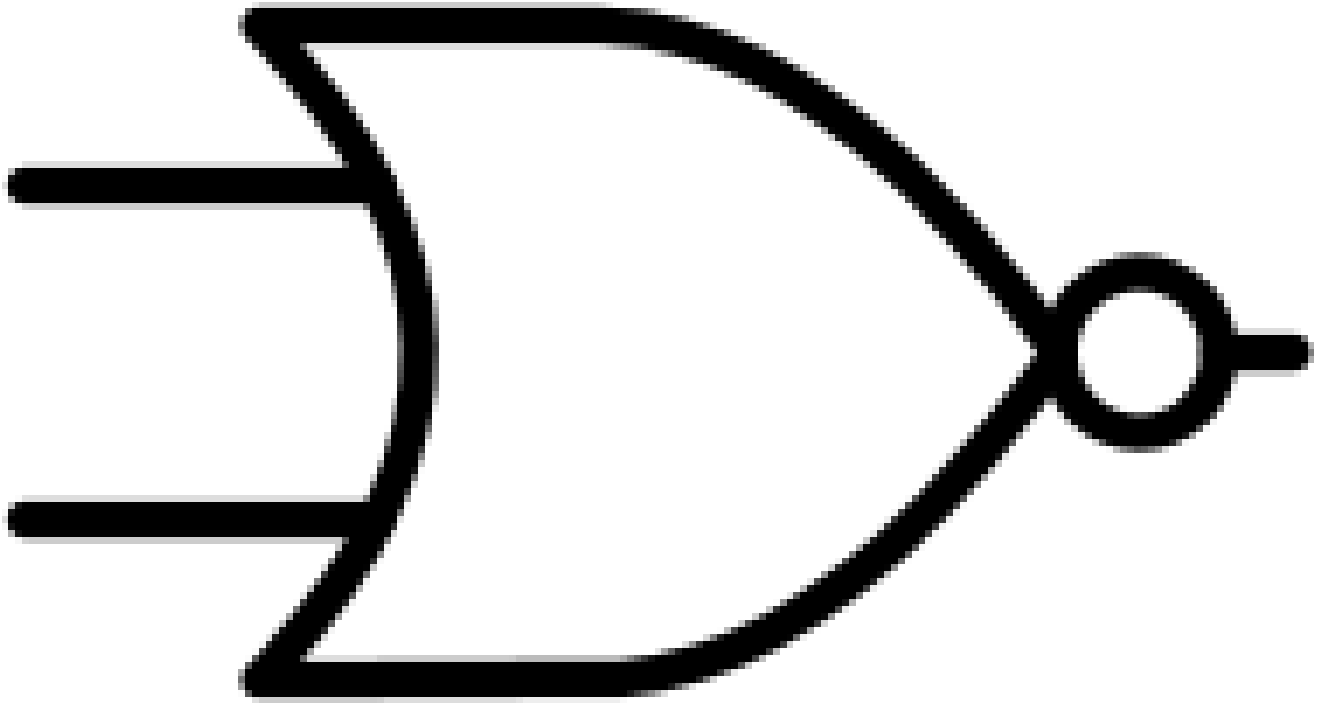
## Question 11:

What is the output of the NOR gate with inputs 0, 1?

Options:

1. 0

2. 1



Correct Answer: 0

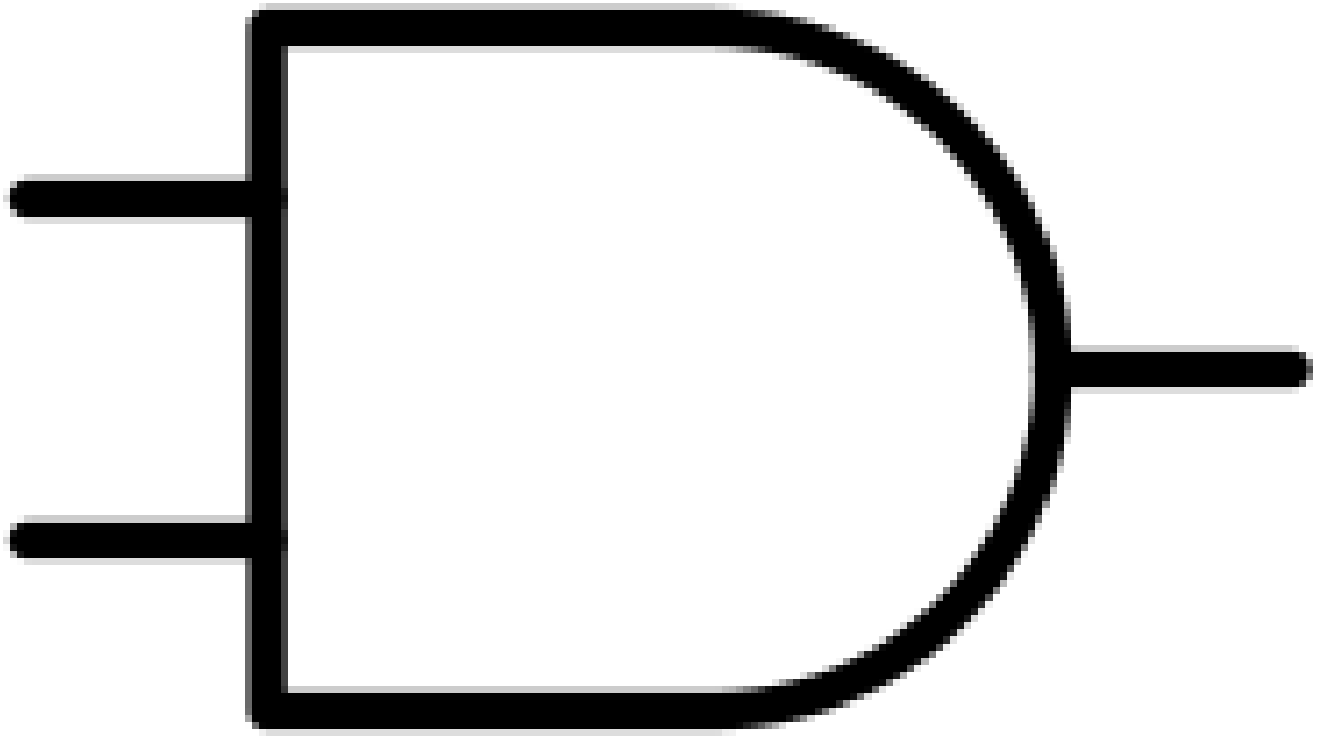
## Question 12:

What is the output of the AND gate with inputs 1, 0?

Options:

1. 1

2. 0



Correct Answer: 0

Question 13:

Are these two circuits equivalent?

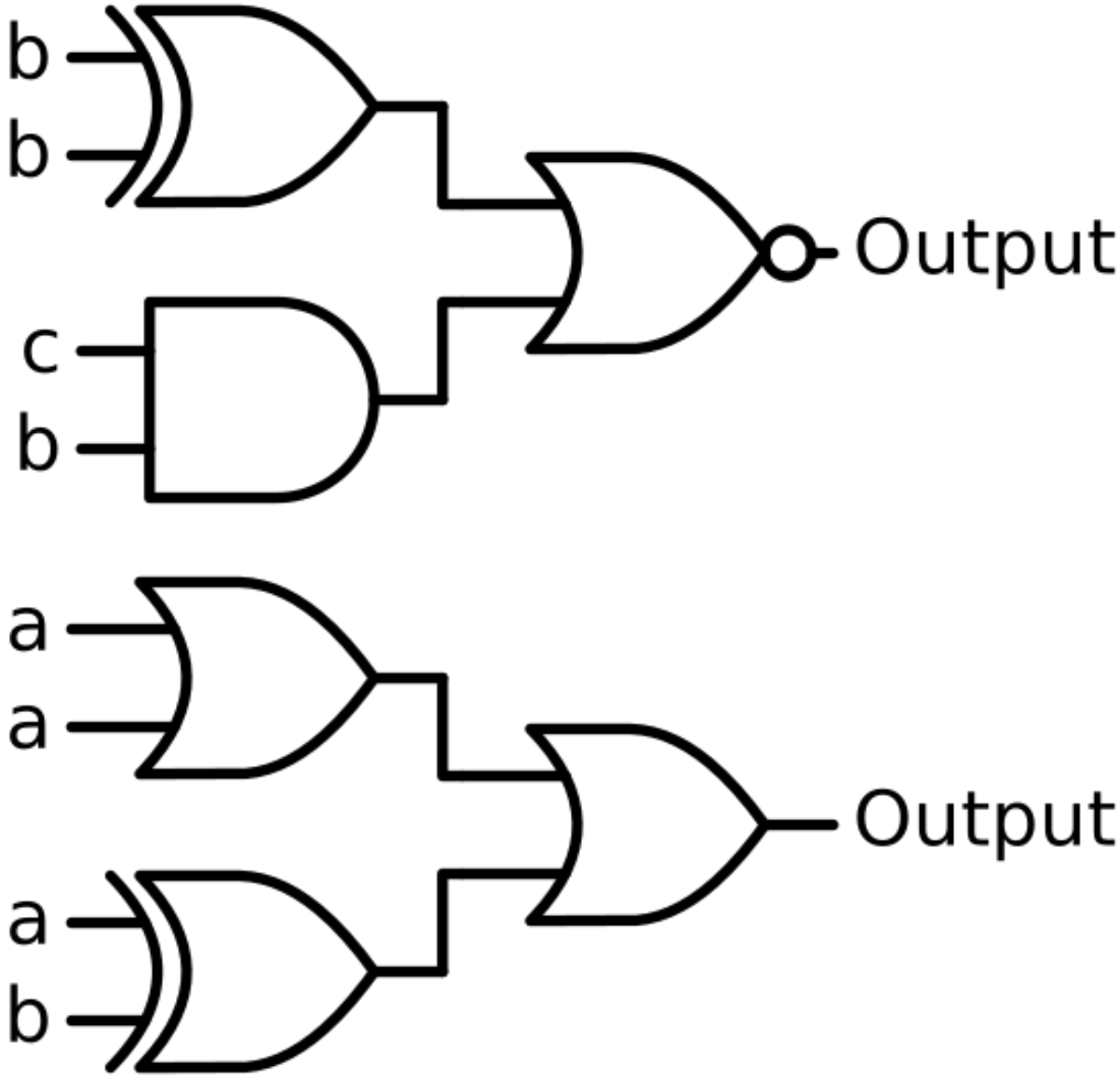
Expression 1: ((b xor b) nor (c and b))

Expression 2: ((a or a) or (a xor b))

Options:

1. Yes

2. No




Correct Answer: no

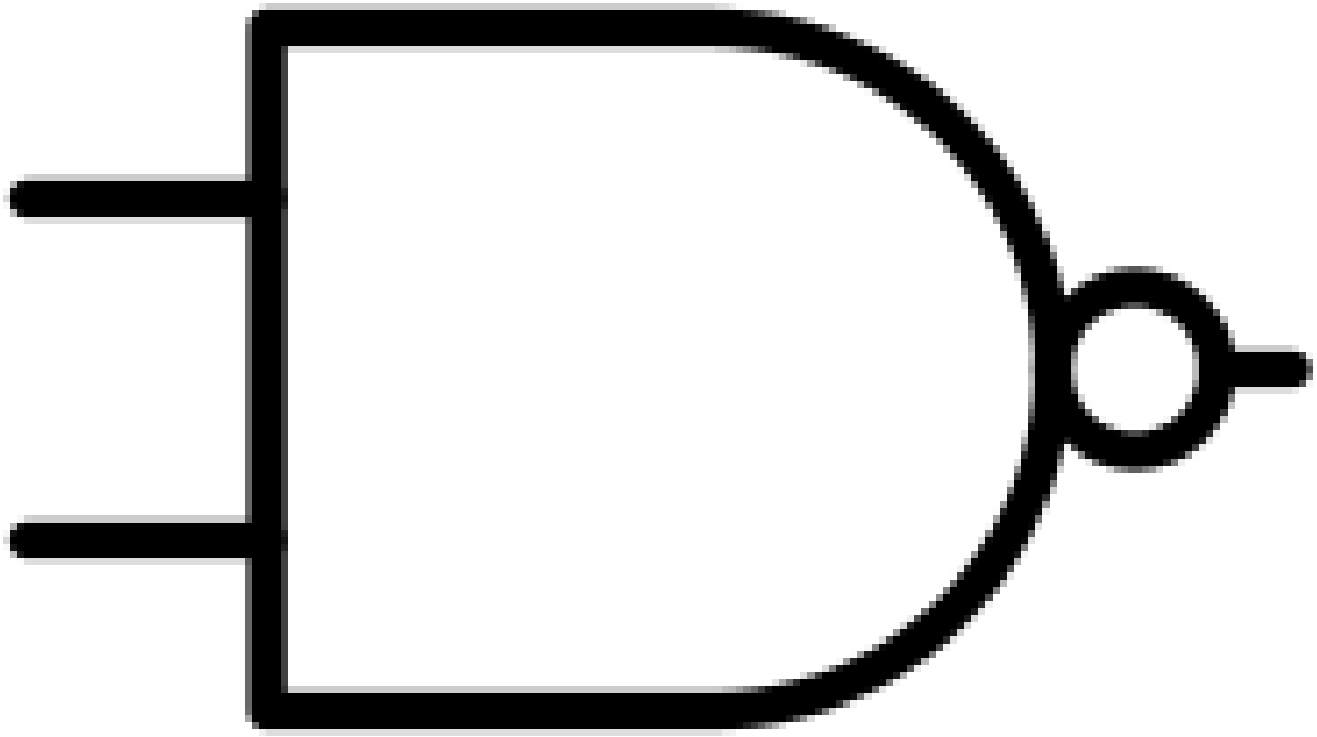
## Question 14:

What is the output of the NAND gate with inputs 1, 1?

Options:

1. 0

2. 1



Correct Answer: 0

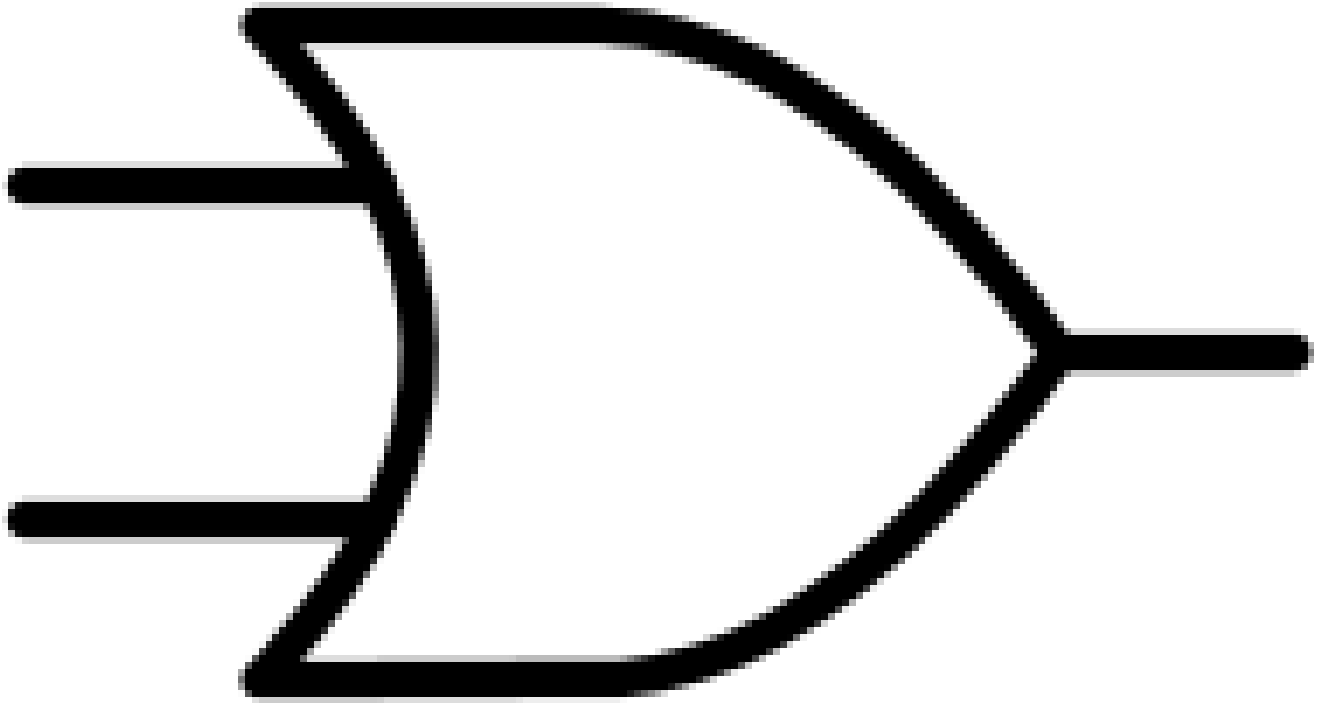
## Question 15:

What is the output of the OR gate with inputs 1, 1?

Options:

1. 1

2. 0



Correct Answer: 1

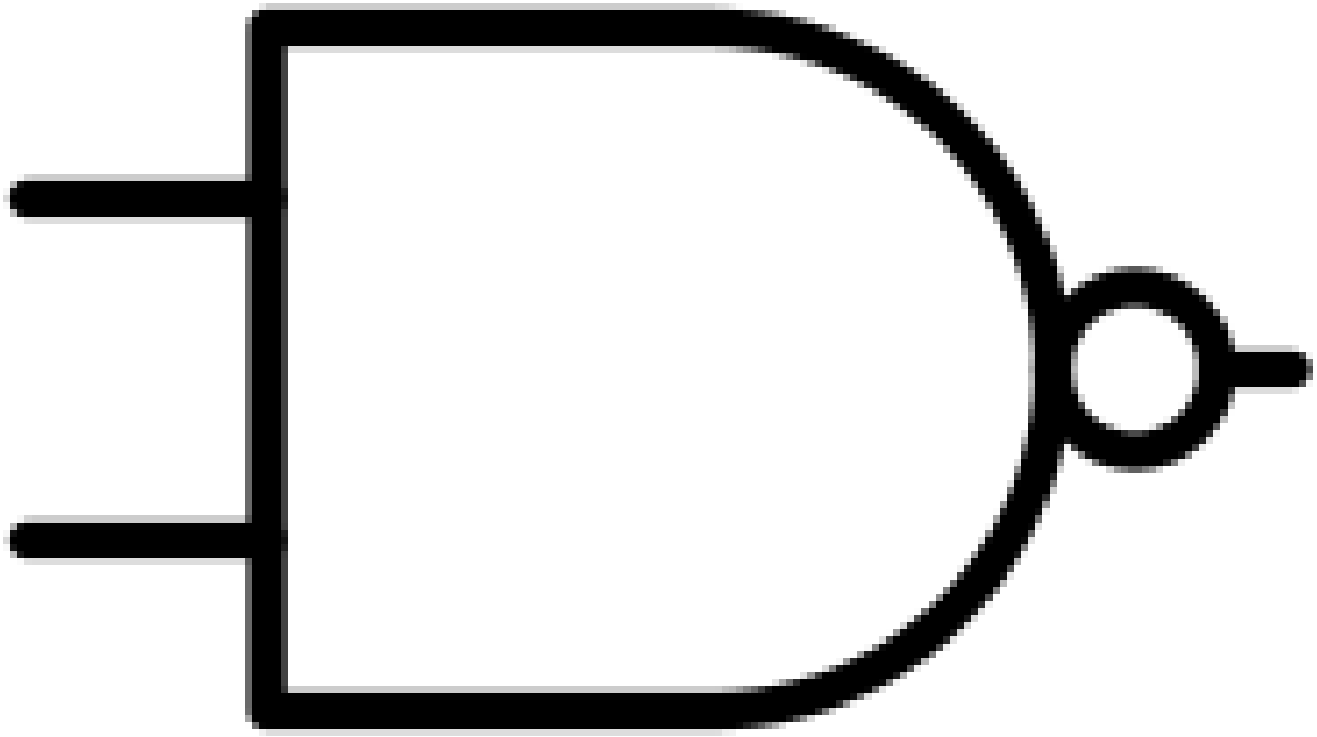
## Question 16:

What is the output of the NAND gate with inputs 0, 0?

Options:

1. 0

2. 1



Correct Answer: 1

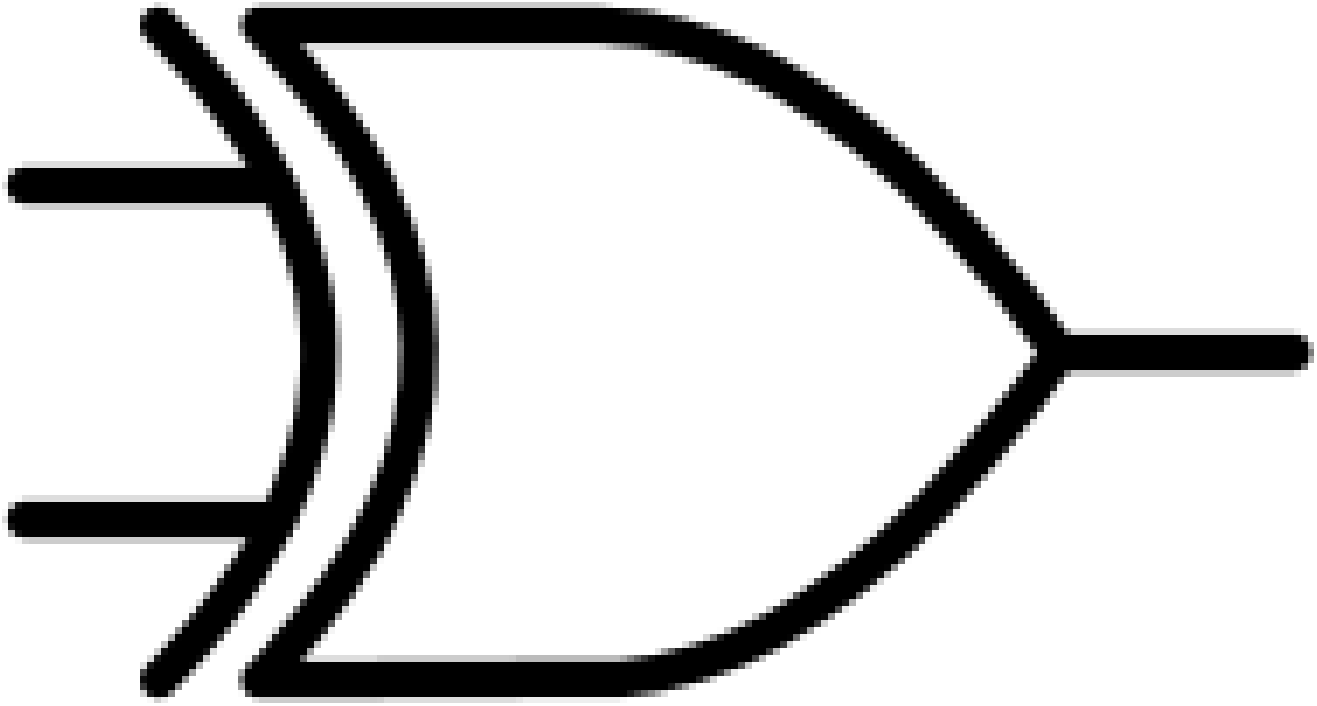
## Question 17:

What is the output of the XOR gate with inputs 0, 0?

Options:

1. 0

2. 1



Correct Answer: 0

Question 18:

Are these two circuits equivalent?

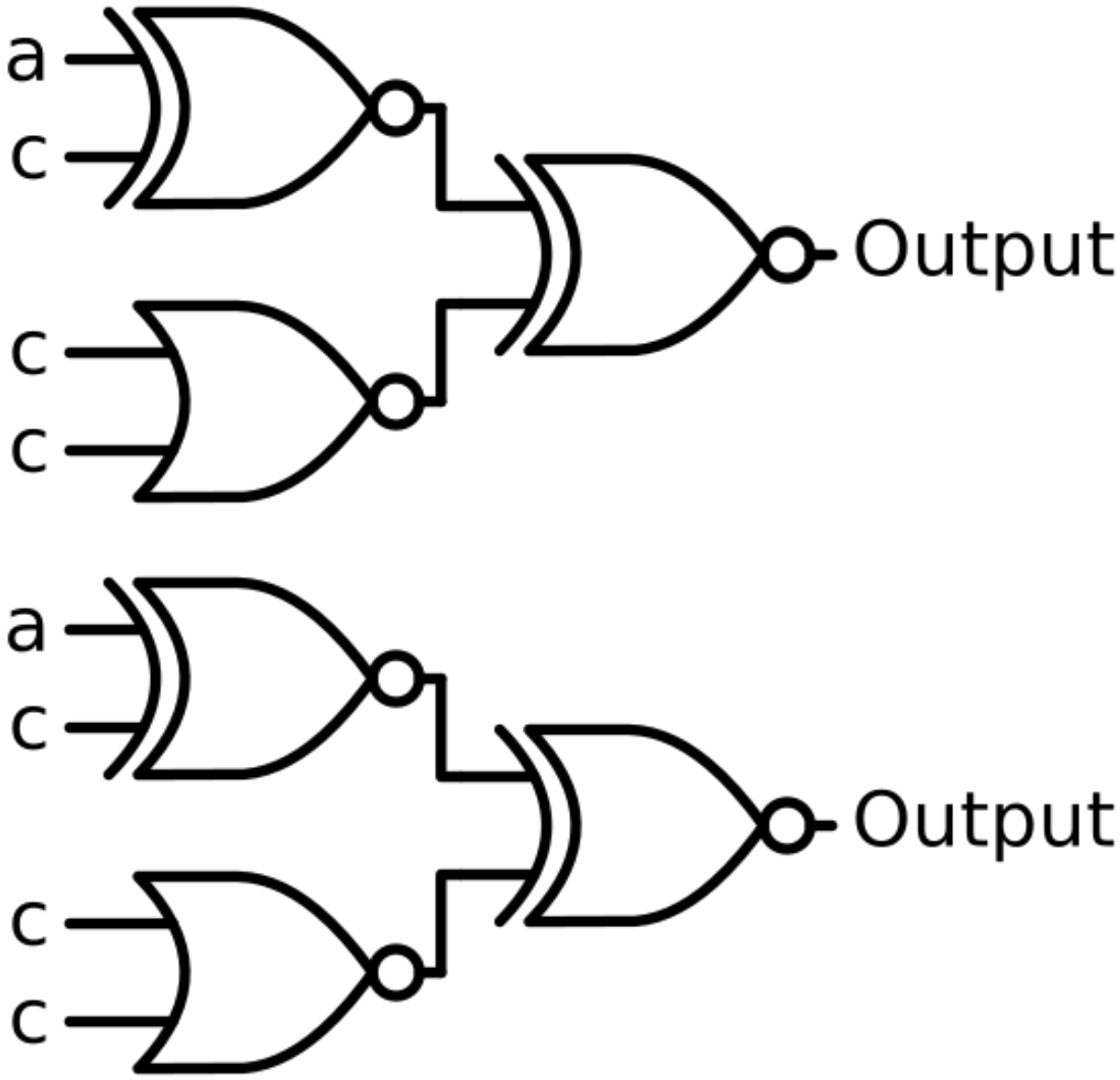
Expression 1: (not ((a xnor c) xor (c nor c)))

Expression 2: (not ((a xnor c) xor (c nor c)))

Options:

1. Yes

2. No




Correct Answer: yes

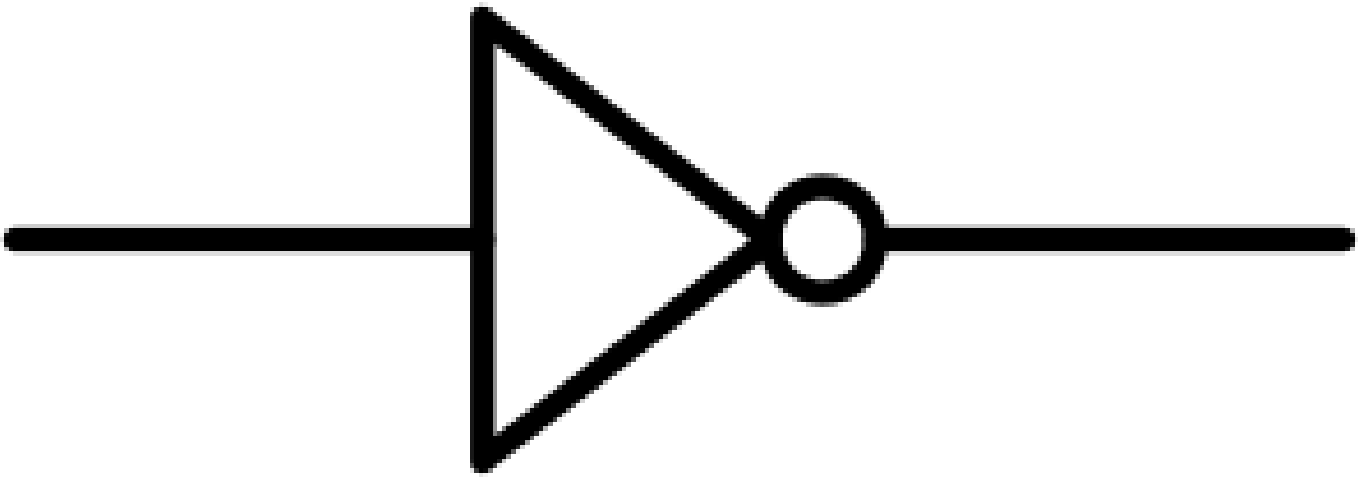
## Question 19:

What is the output of the NOT gate with input 0?

Options:

1. 1

2. 0



Correct Answer: 1

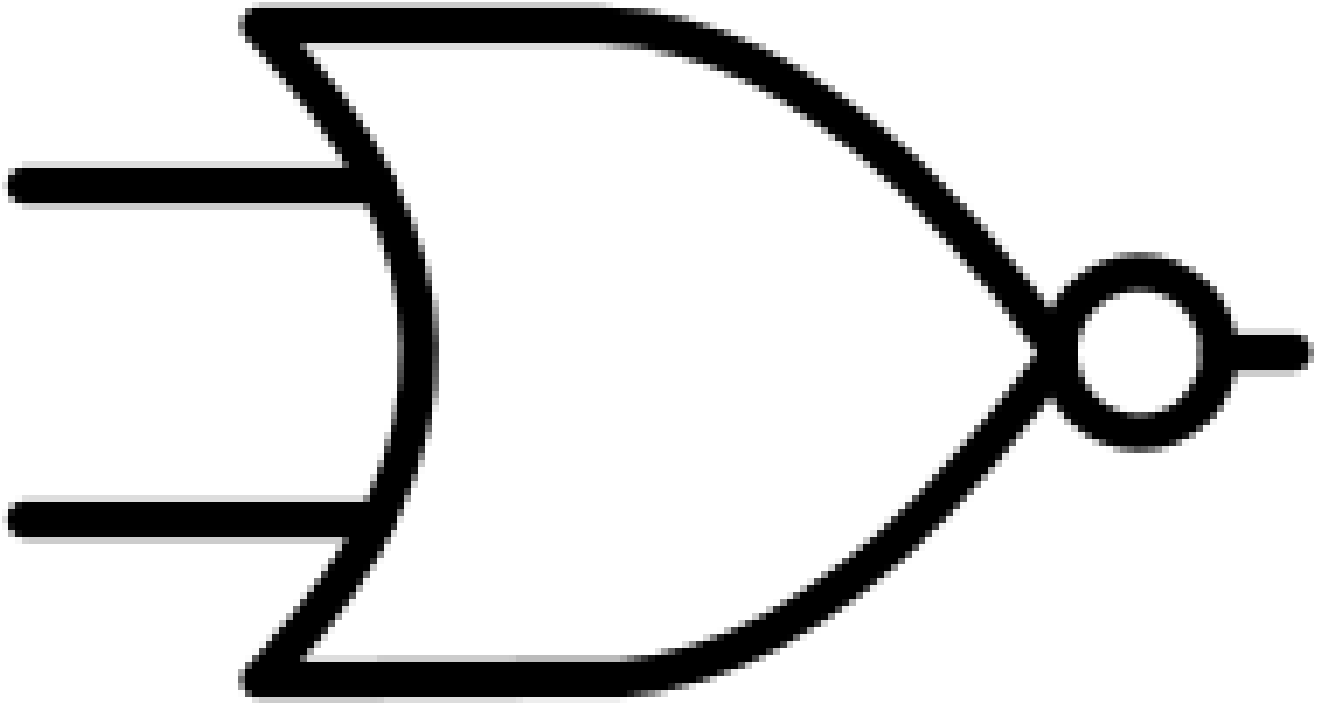
## Question 20:

What is the output of the NOR gate with inputs 0, 0?

Options:

1. 1

2. 0



Correct Answer: 1

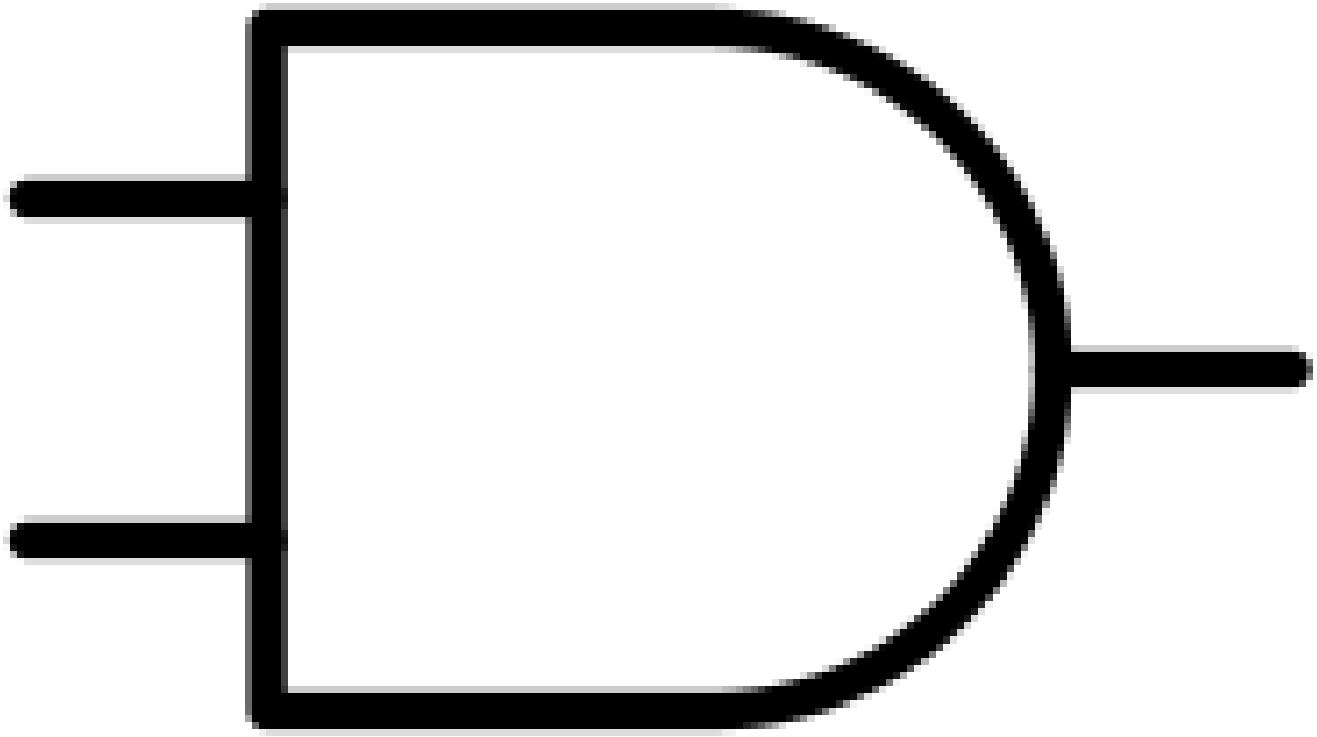
## Question 21:

What is the output of the AND gate with inputs 0, 1?

Options:

1. 0

2. 1



Correct Answer: 0

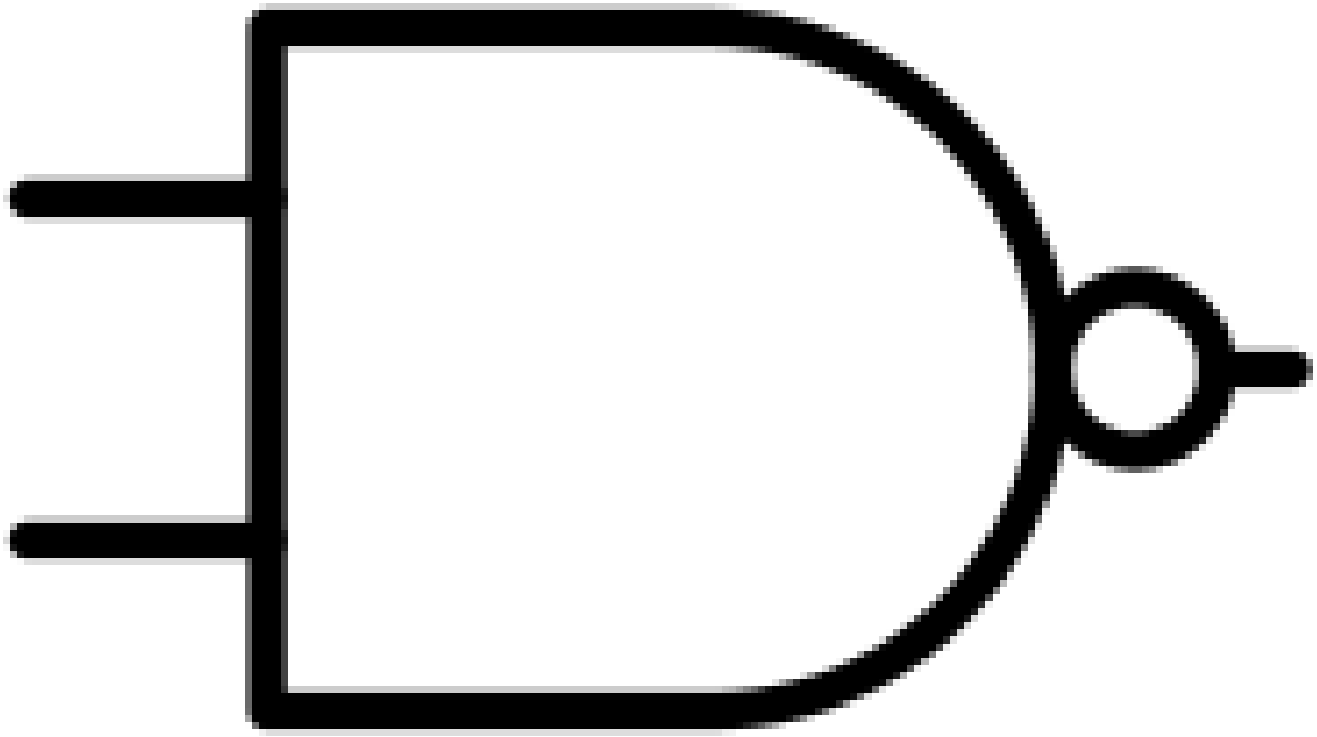
## Question 22:

What is the output of the NAND gate with inputs 1, 0?

Options:

1. 0

2. 1



Correct Answer: 1

Question 23:

Are these two circuits equivalent?

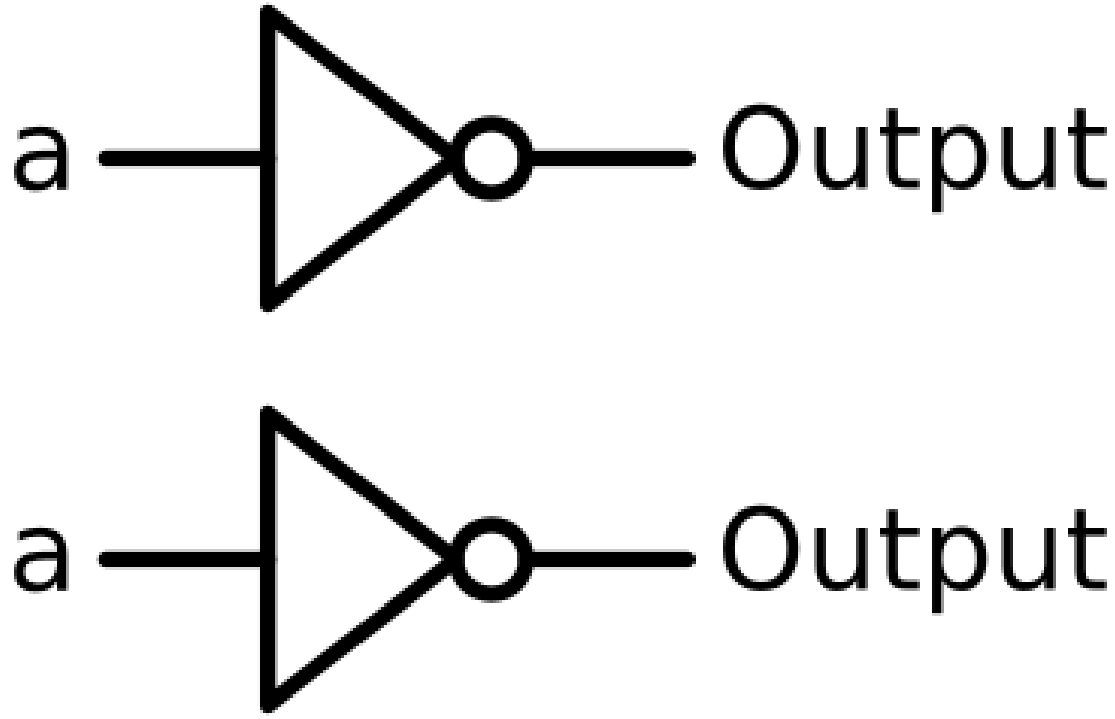
Expression 1: (not a)

Expression 2: (not a)

Options:

1. Yes

2. No




Correct Answer: yes

Question 24:

Are these two circuits equivalent?

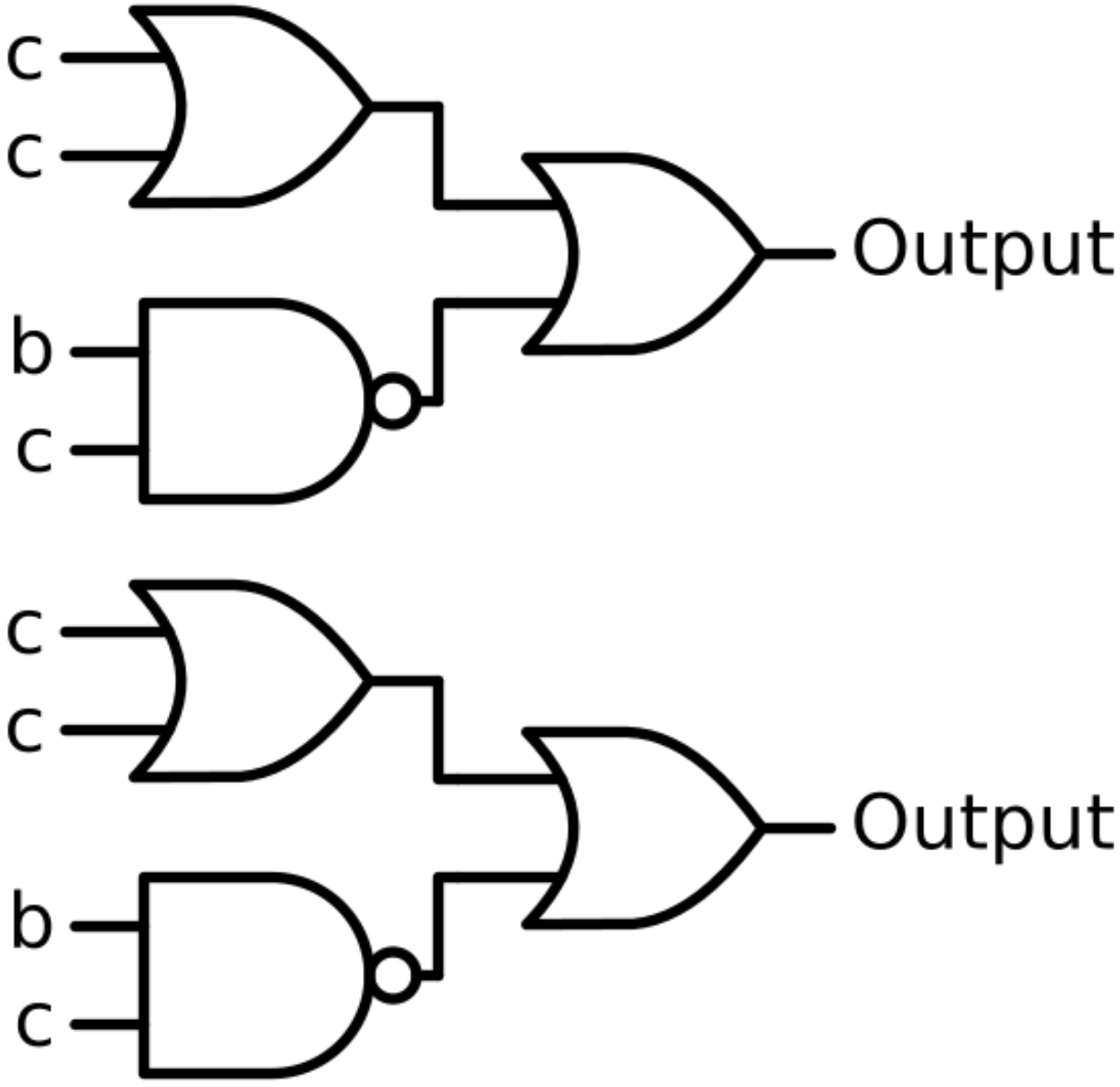
Expression 1: ((c or c) or (b nand c))

Expression 2: ((c or c) or (b nand c))

Options:

1. Yes

2. No




Correct Answer: yes

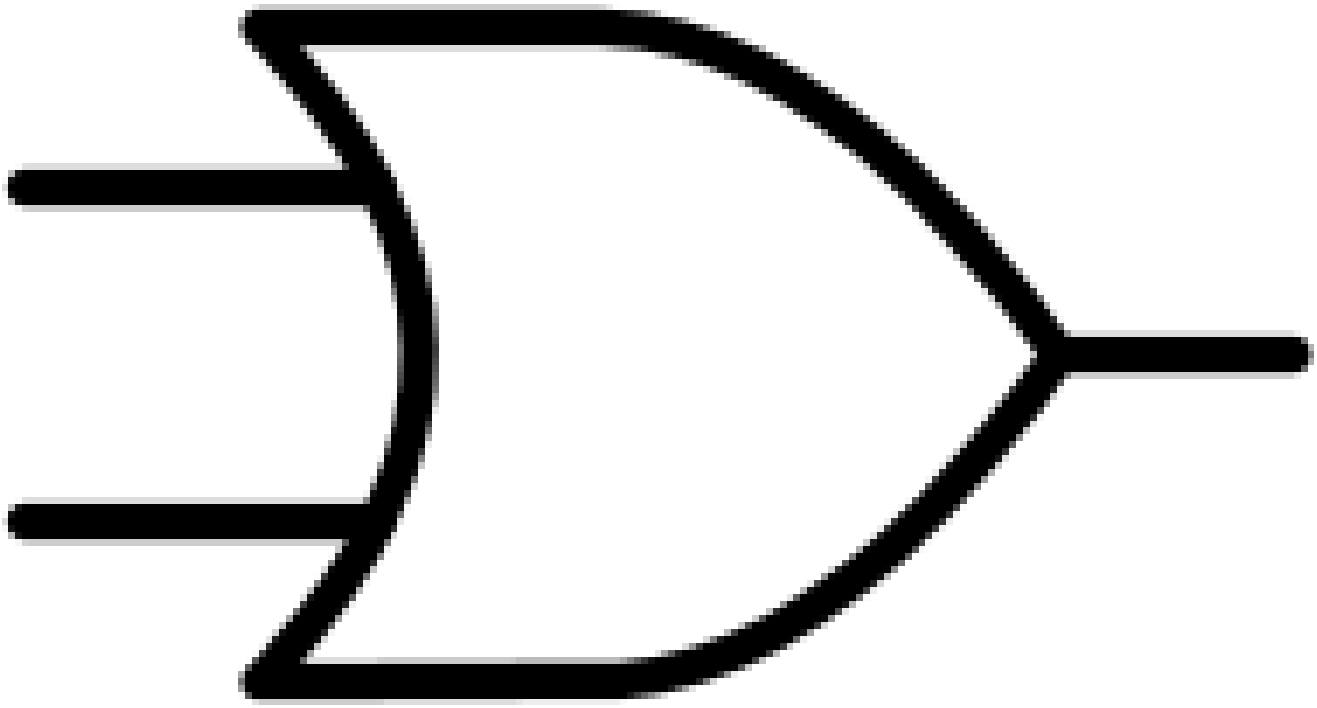
## Question 25:

What is the output of the OR gate with inputs 0, 1?

Options:

1. 0

2. 1



Correct Answer: 1

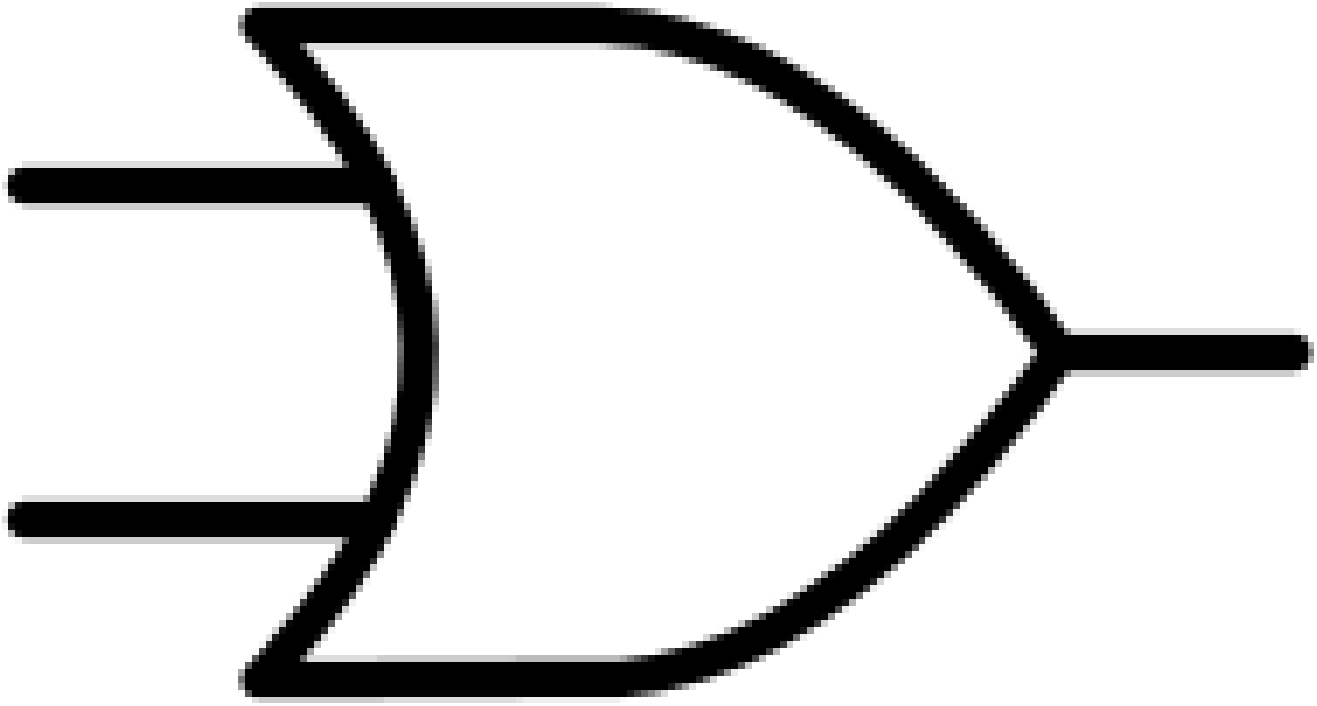
## Question 26:

What is the output of the OR gate with inputs 1, 1?

Options:

1. 0

2. 1



Correct Answer: 1

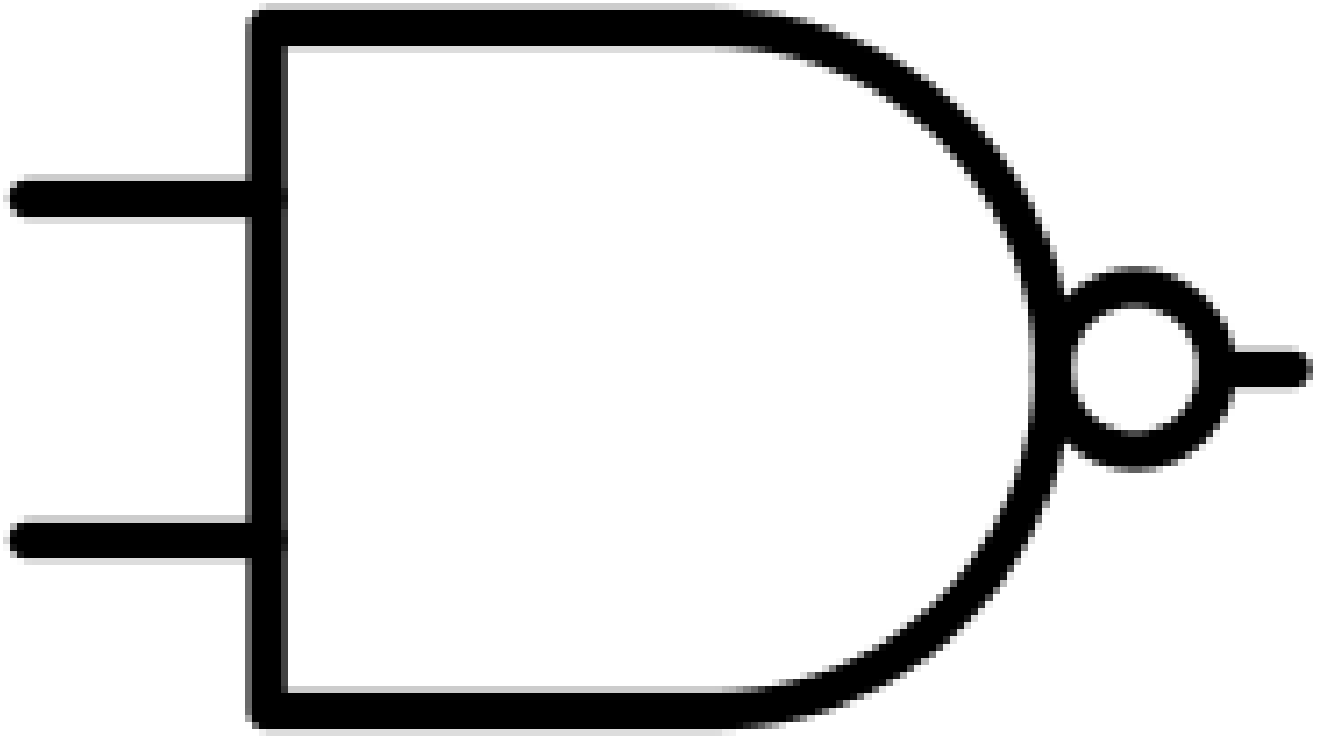
## Question 27:

What is the output of the NAND gate with inputs 0, 1?

Options:

1. 0

2. 1



Correct Answer: 1

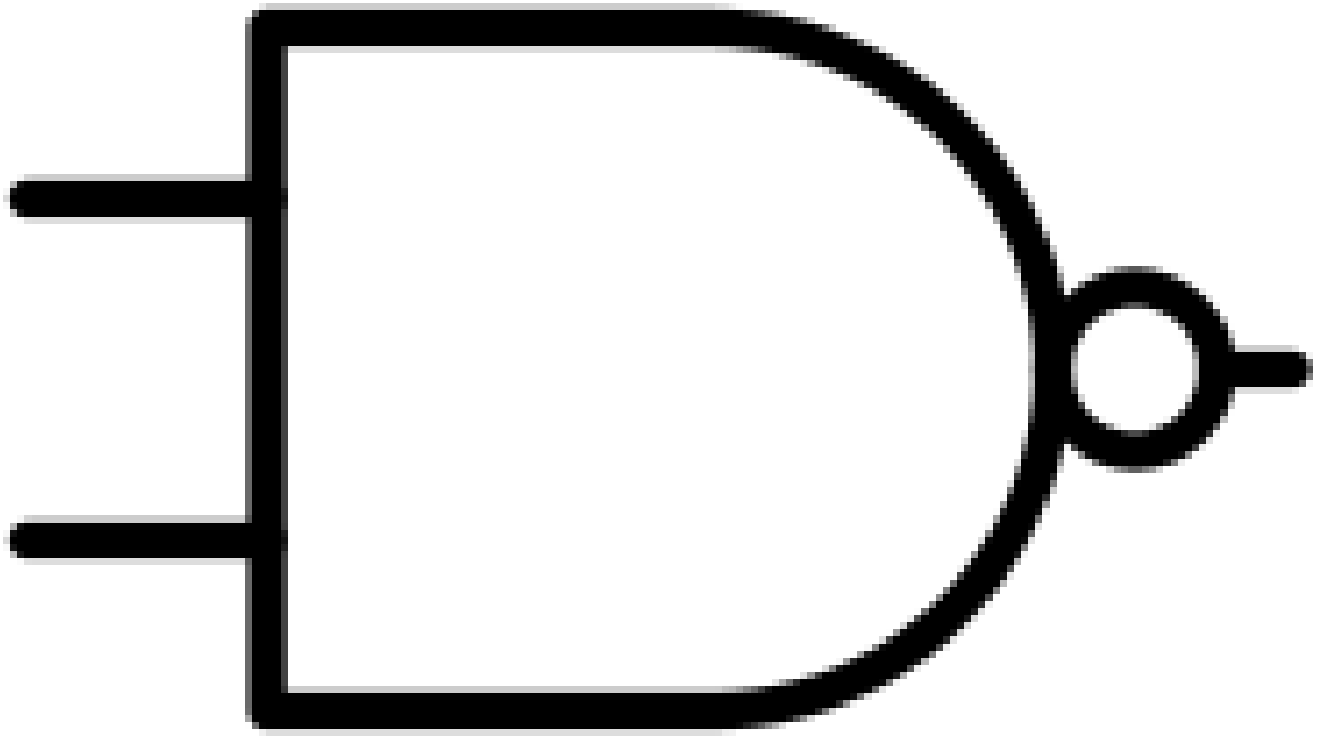
## Question 28:

What is the output of the NAND gate with inputs 1, 1?

Options:

1. 0

2. 1



Correct Answer: 0

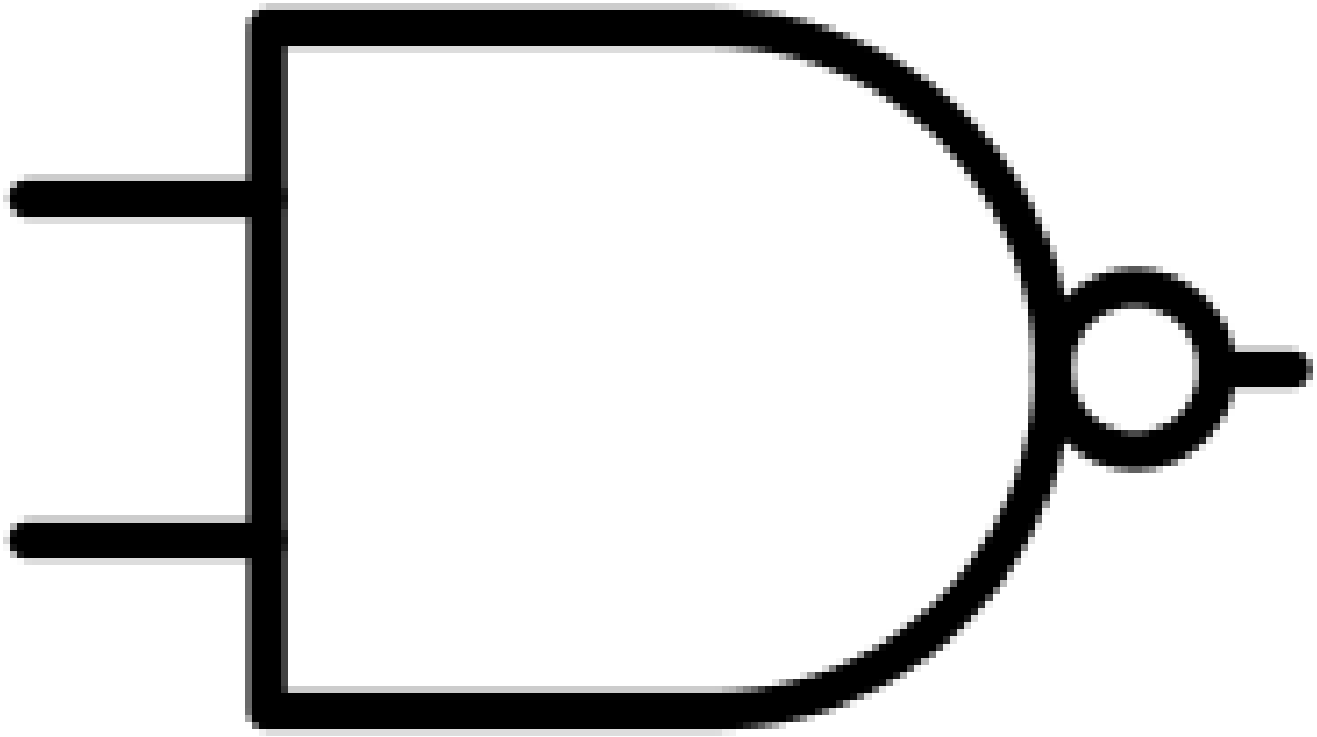
## Question 29:

What is the output of the NAND gate with inputs 1, 0?

Options:

1. 1

2. 0



Correct Answer: 1

Question 30:

Are these two circuits equivalent?

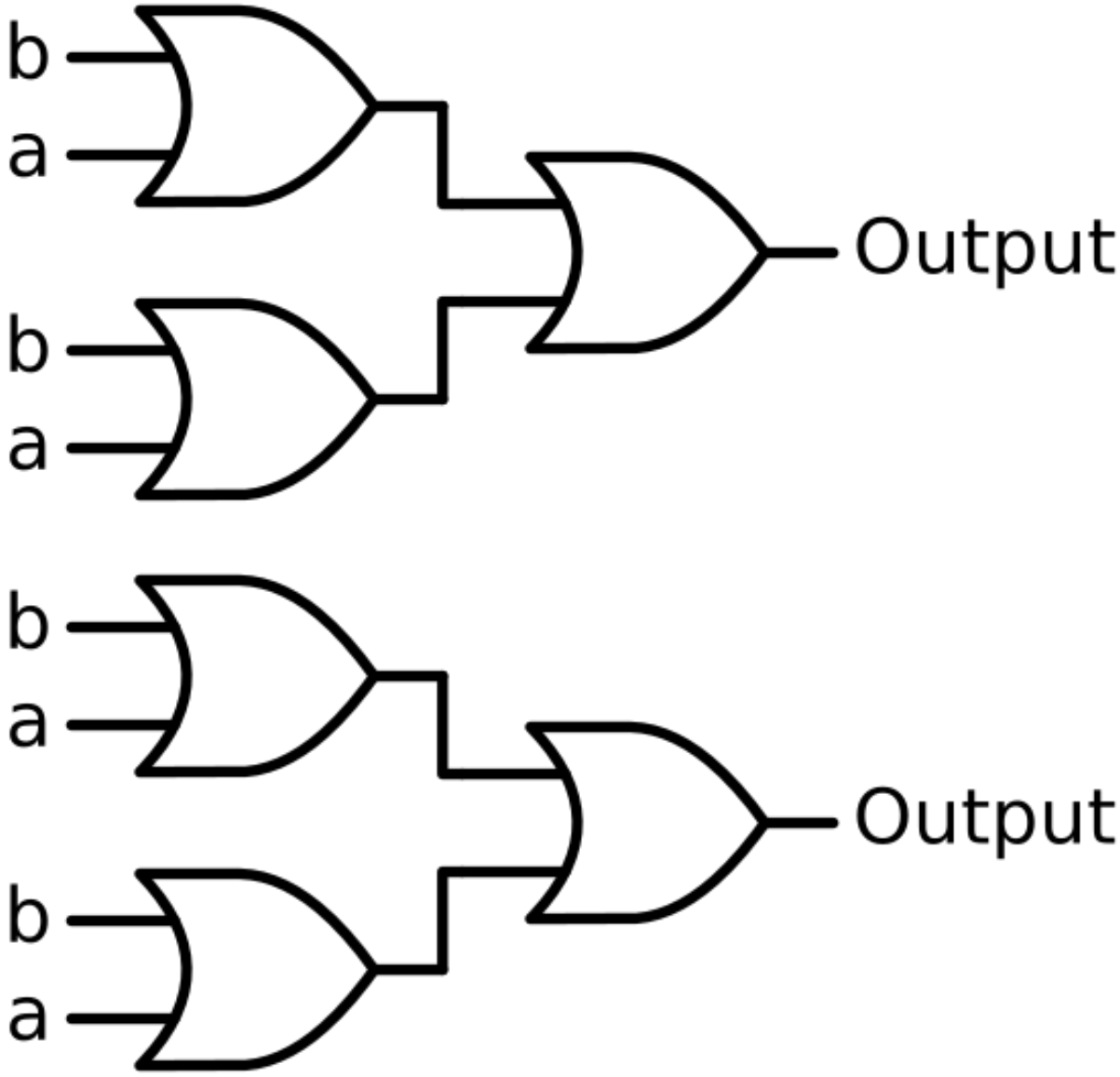
Expression 1: ((b or a) or (b or a))

Expression 2: ((b or a) or (b or a))

Options:

1. Yes

2. No




Correct Answer: yes

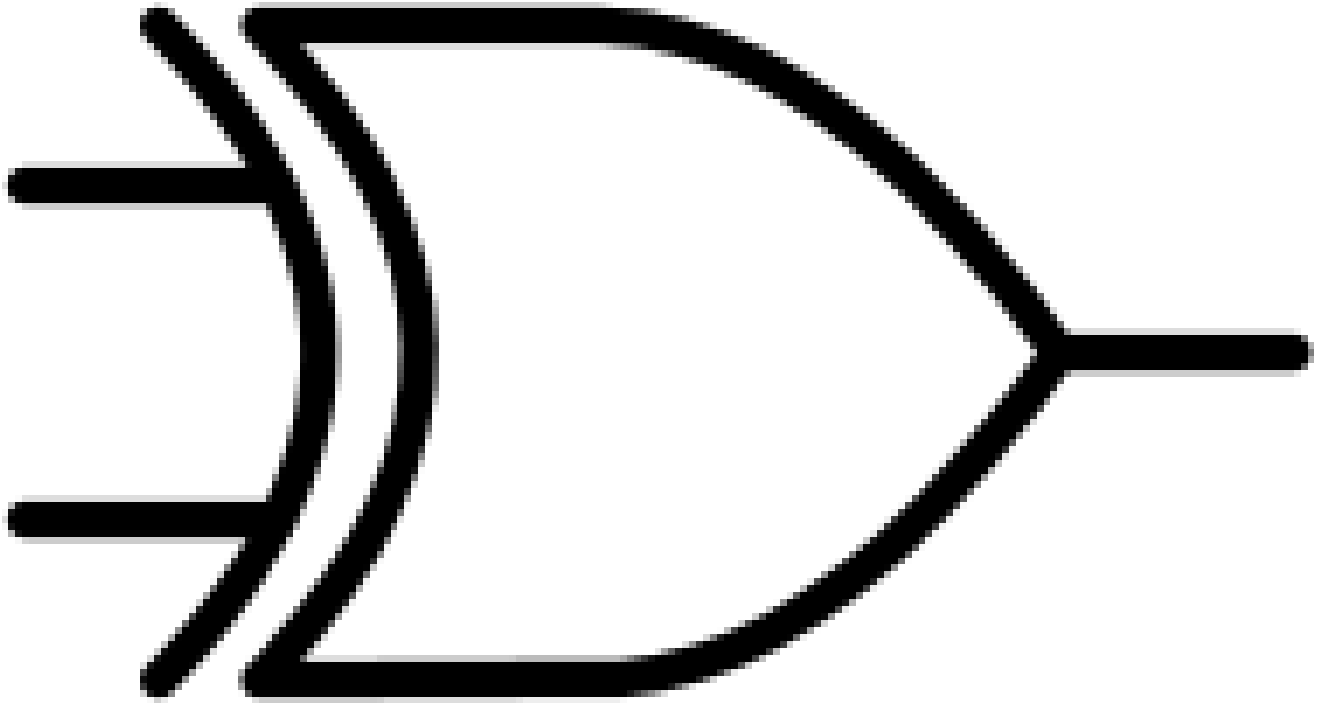
## Question 31:

What is the output of the XOR gate with inputs 0, 0?

Options:

1. 0

2. 1



Correct Answer: 0

Question 32:

Are these two circuits equivalent?

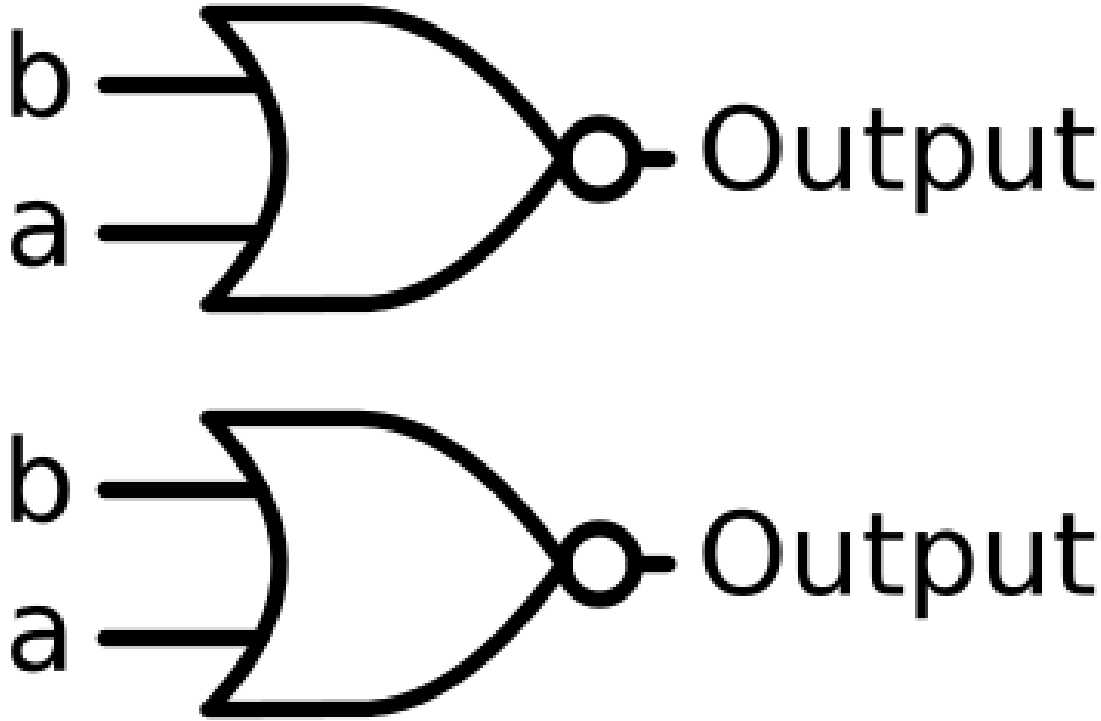
Expression 1: (b nor a)

Expression 2: (b nor a)

Options:

1. Yes

2. No




Correct Answer: yes

Question 33:

Are these two circuits equivalent?

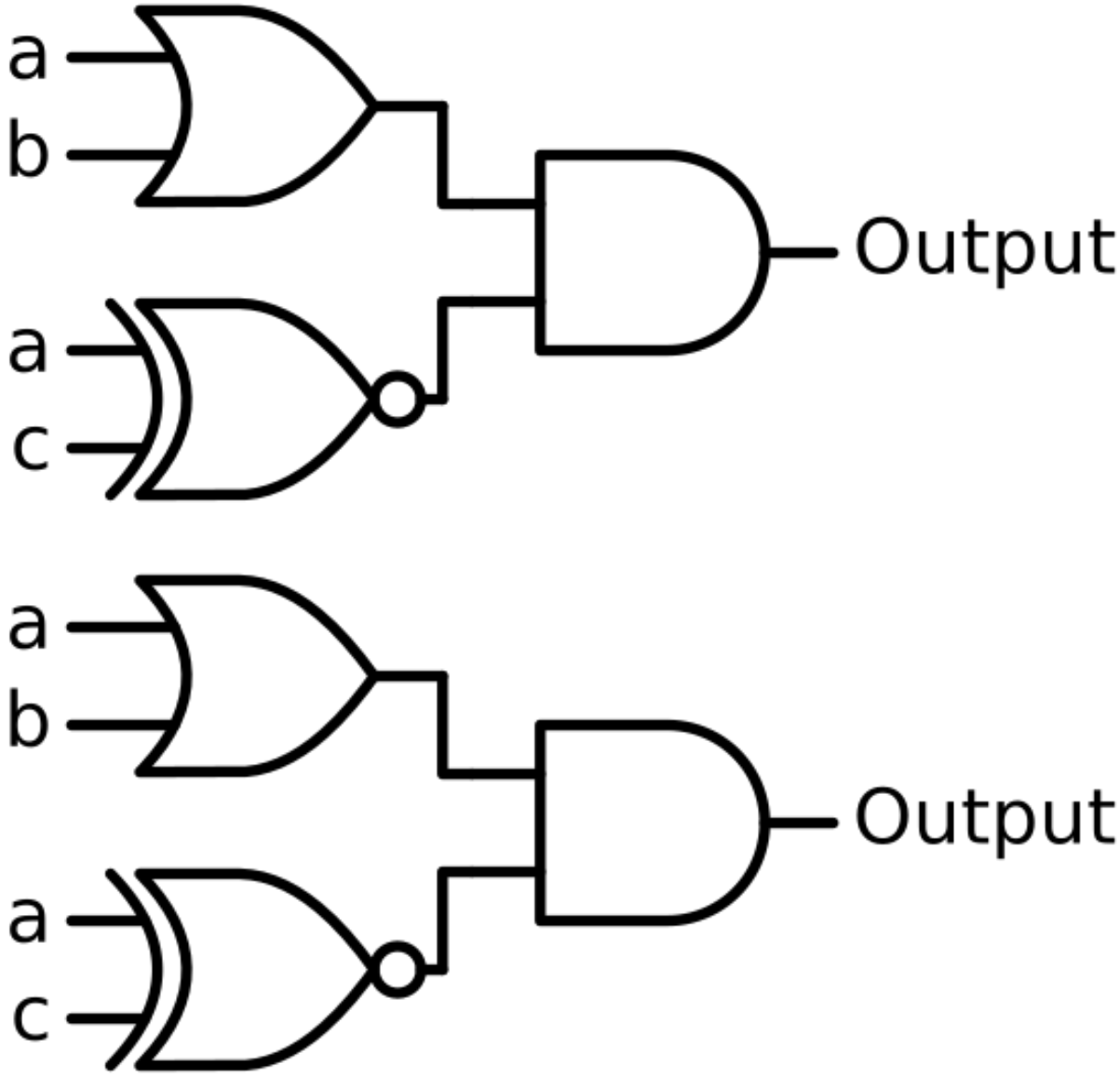
Expression 1: ((a or b) and (a xnor c))

Expression 2: ((a or b) and (a xnor c))

Options:

1. Yes

2. No




Correct Answer: yes

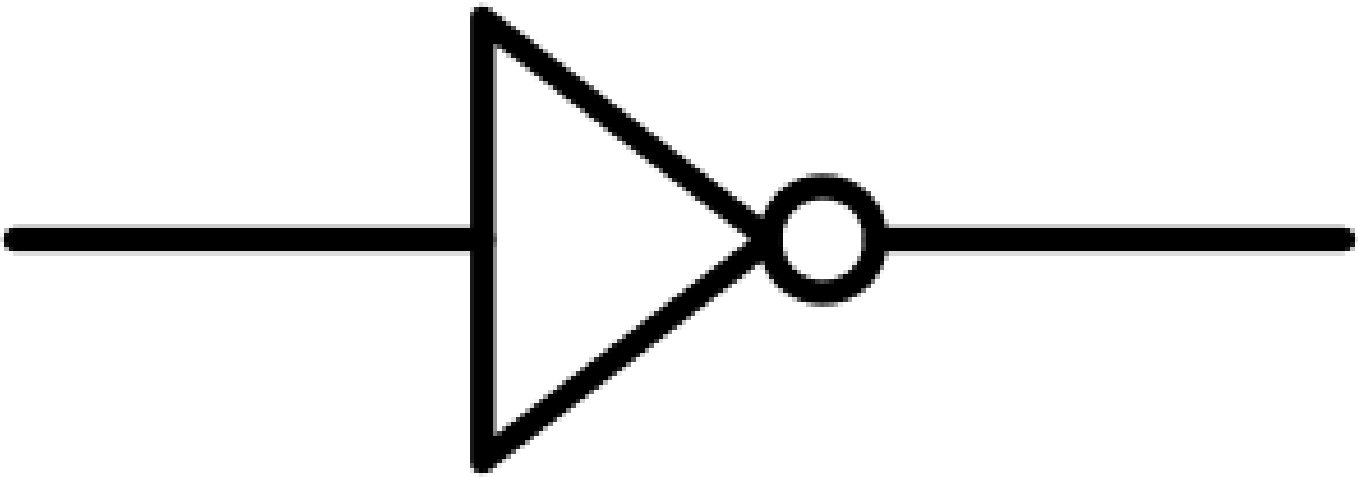
## Question 34:

What is the output of the NOT gate with input 0?

Options:

1. 1

2. 0



Correct Answer: 1

Question 35:

Are these two circuits equivalent?

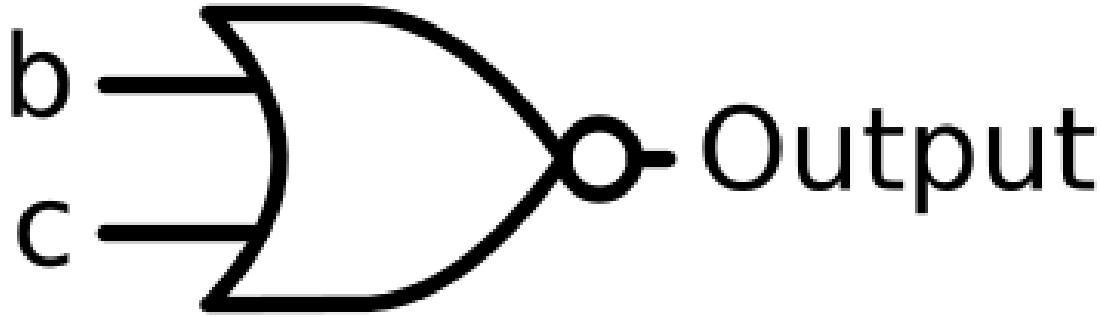
Expression 1: (not (b or c))

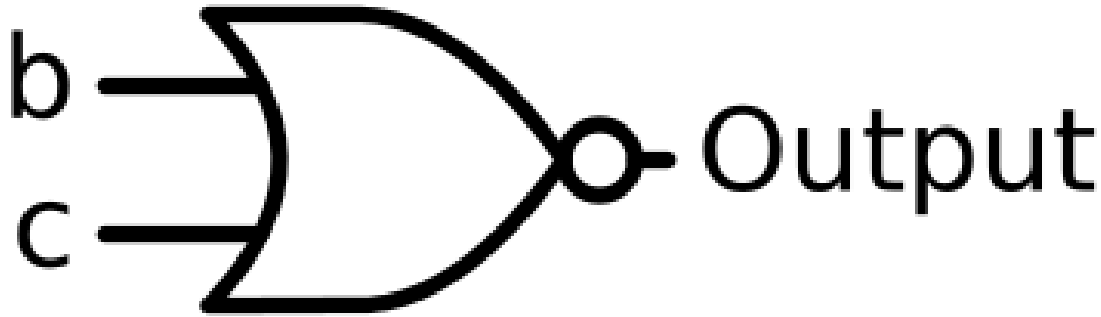
Expression 2: (not (b or c))

Options:

1. Yes

2. No




Correct Answer: yes

Question 36:

Are these two circuits equivalent?

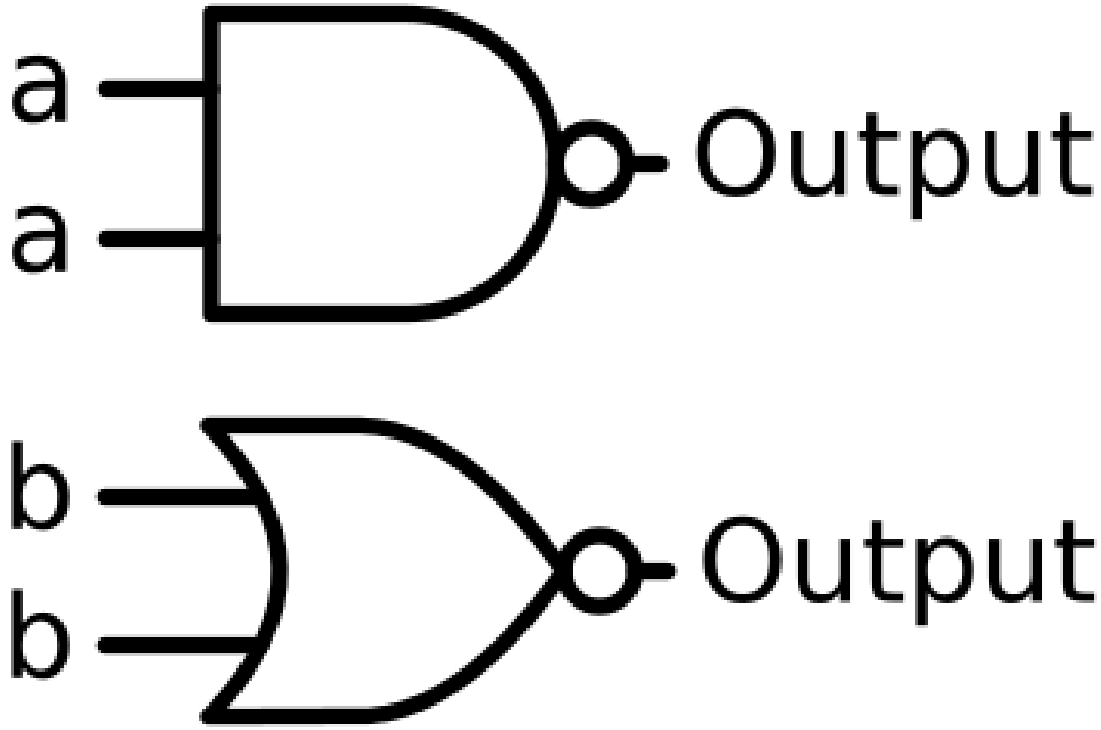
Expression 1: (a nand a)

Expression 2: (b nor b)

Options:

1. Yes

2. No




Correct Answer: no

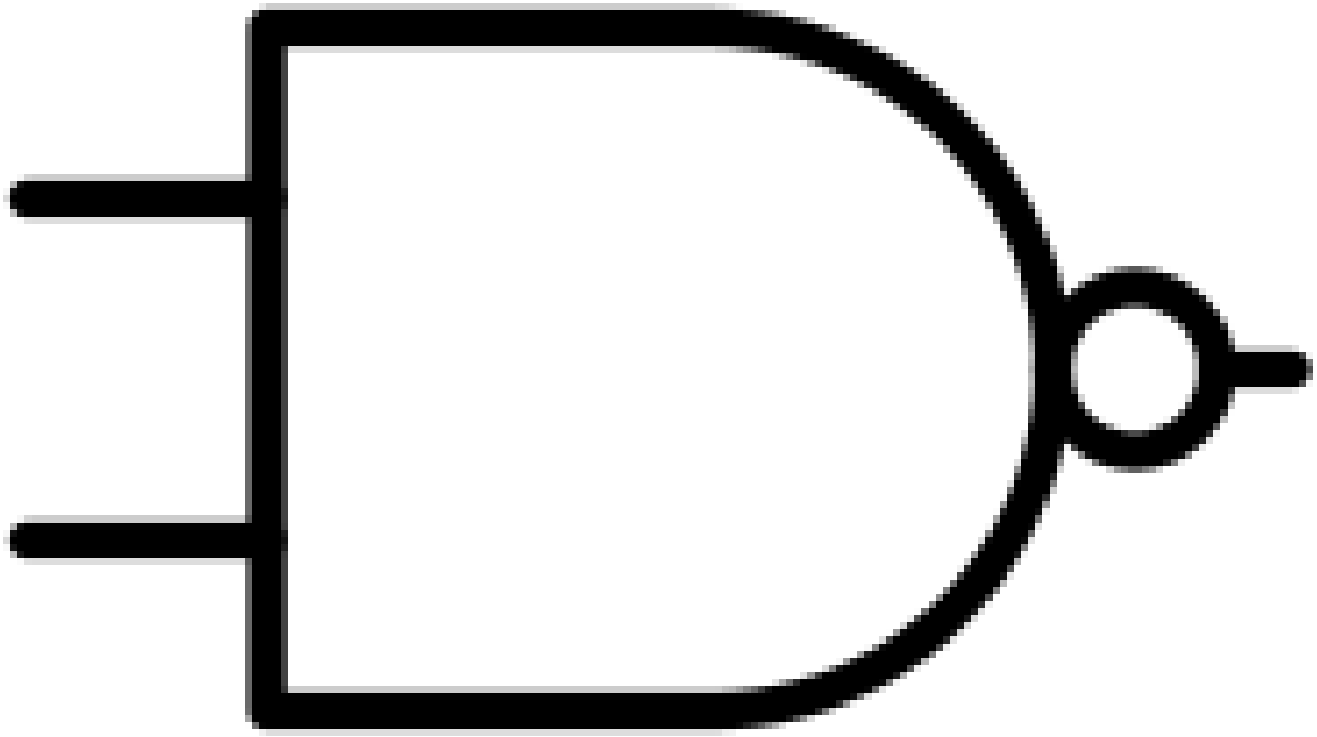
## Question 37:

What is the output of the NAND gate with inputs 1, 1?

Options:

1. 1

2. 0



Correct Answer: 0

Question 38:

Are these two circuits equivalent?

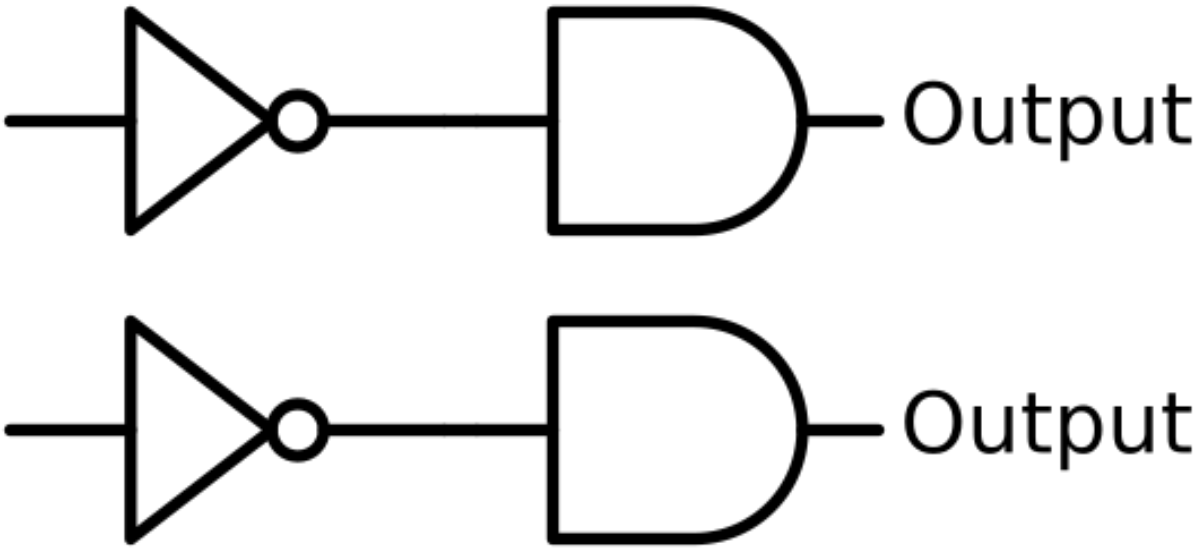
Expression 1: (not (not c))

Expression 2: (not (not c))

Options:

1. Yes

2. No




Correct Answer: yes

Question 39:

Are these two circuits equivalent?

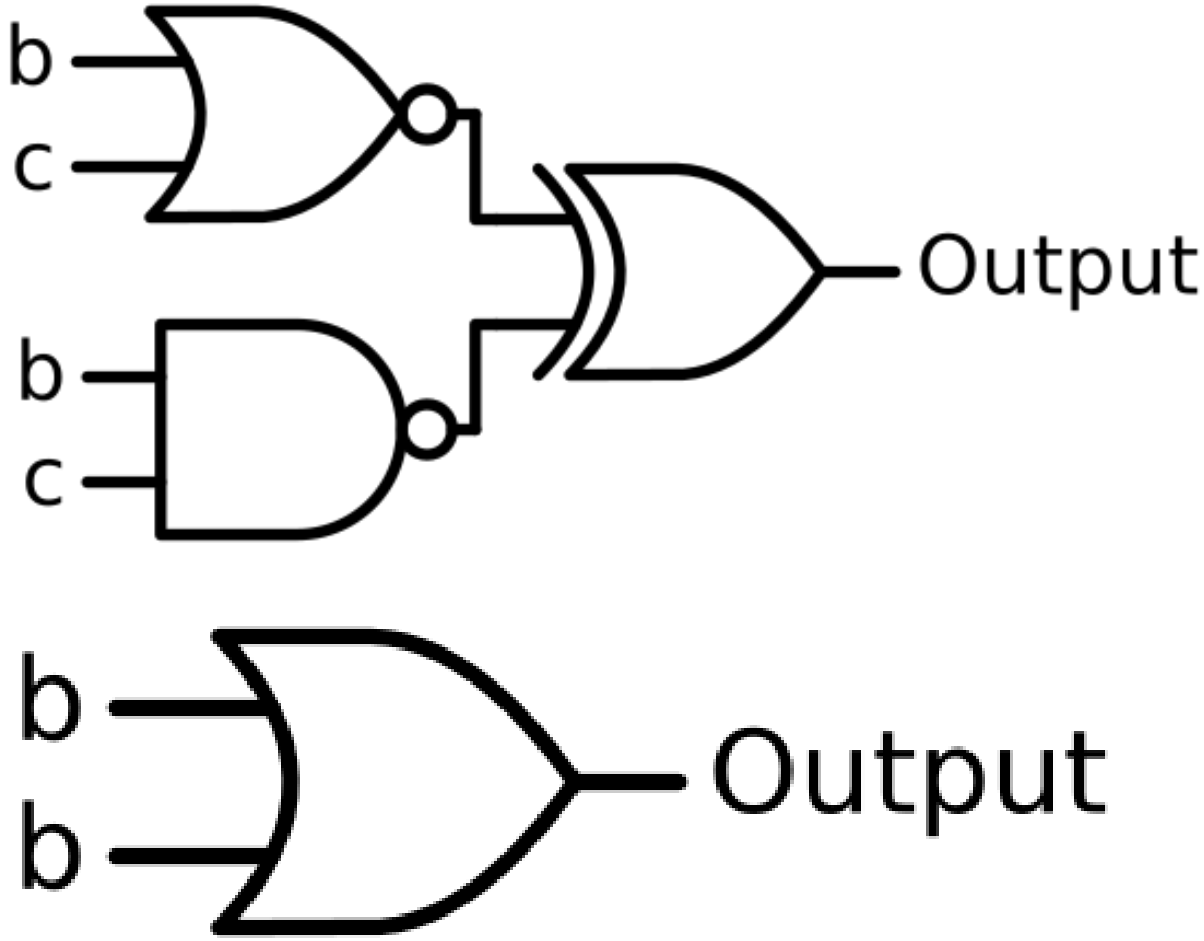
Expression 1: (not ((b nor c) xnor (b nand c)))

Expression 2: (b or b)

Options:

1. Yes

2. No




Correct Answer: no

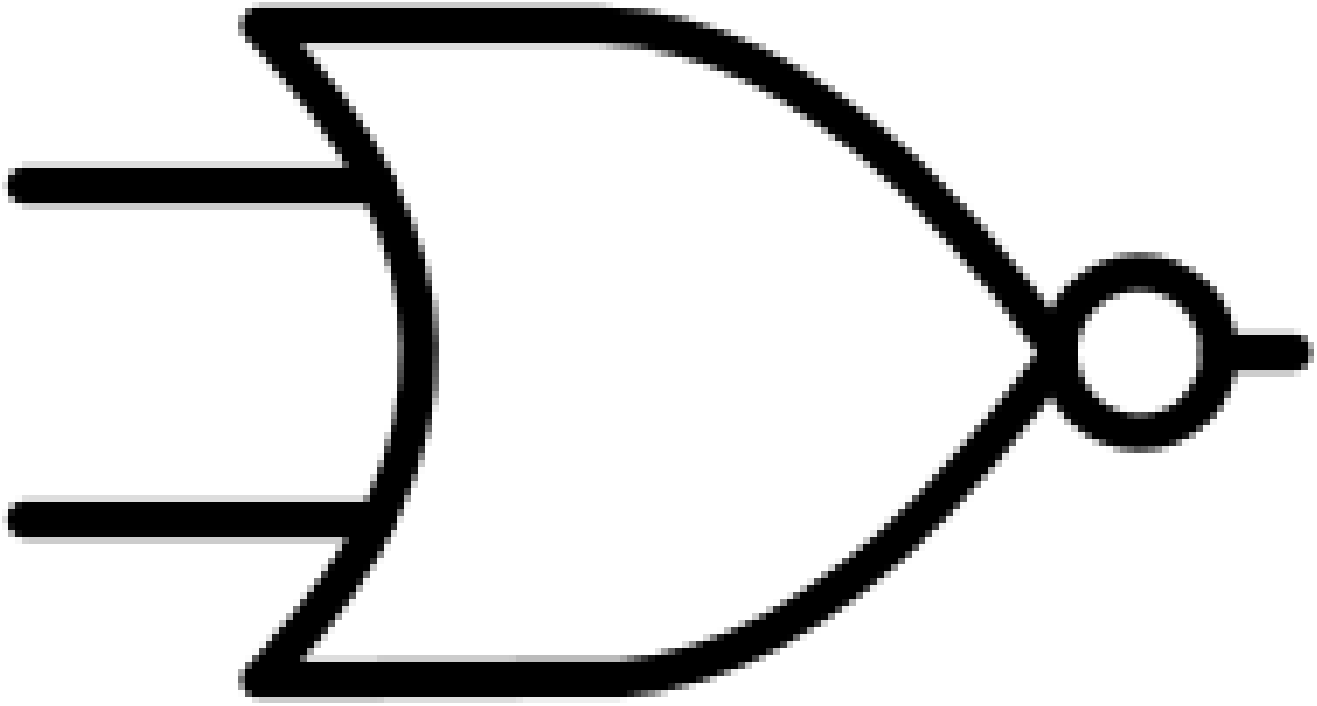
## Question 40:

What is the output of the NOR gate with inputs 0, 0?

Options:

1. 0

2. 1



Correct Answer: 1

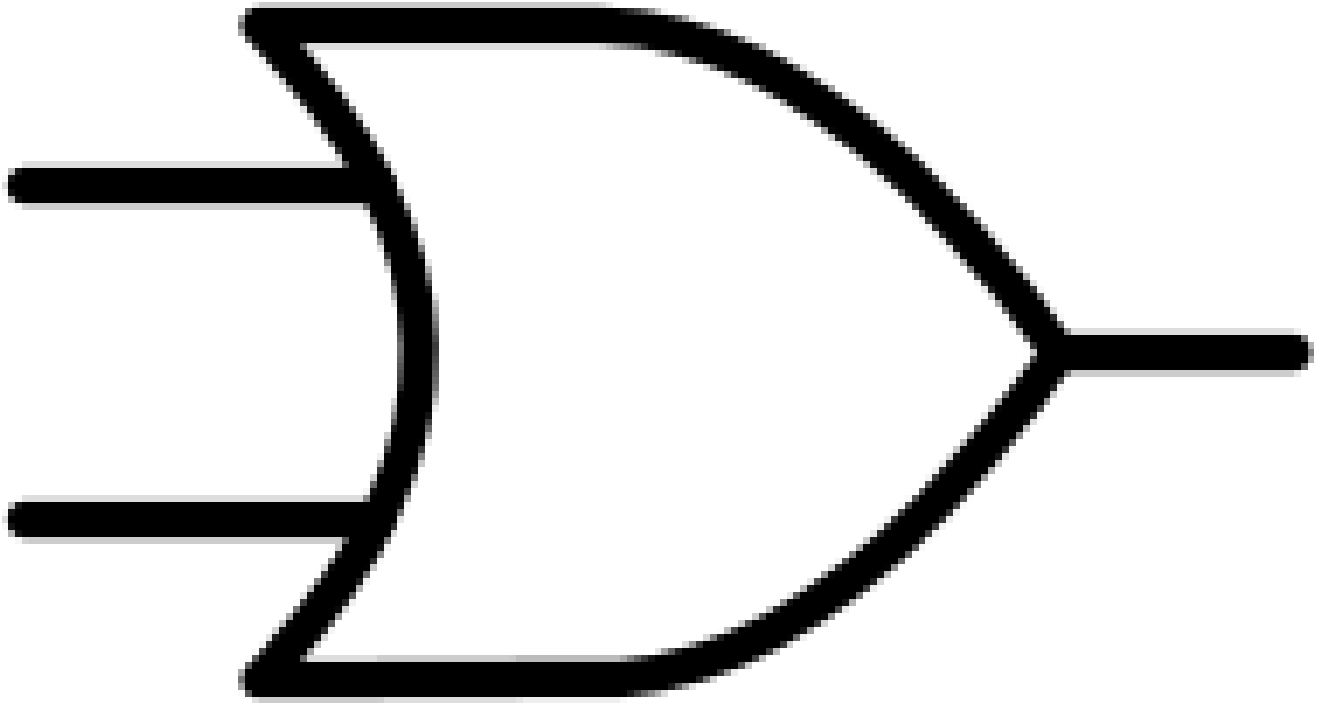
## Question 41:

What is the output of the OR gate with inputs 0, 1?

Options:

1. 1

2. 0



Correct Answer: 1

Question 42:

Are these two circuits equivalent?

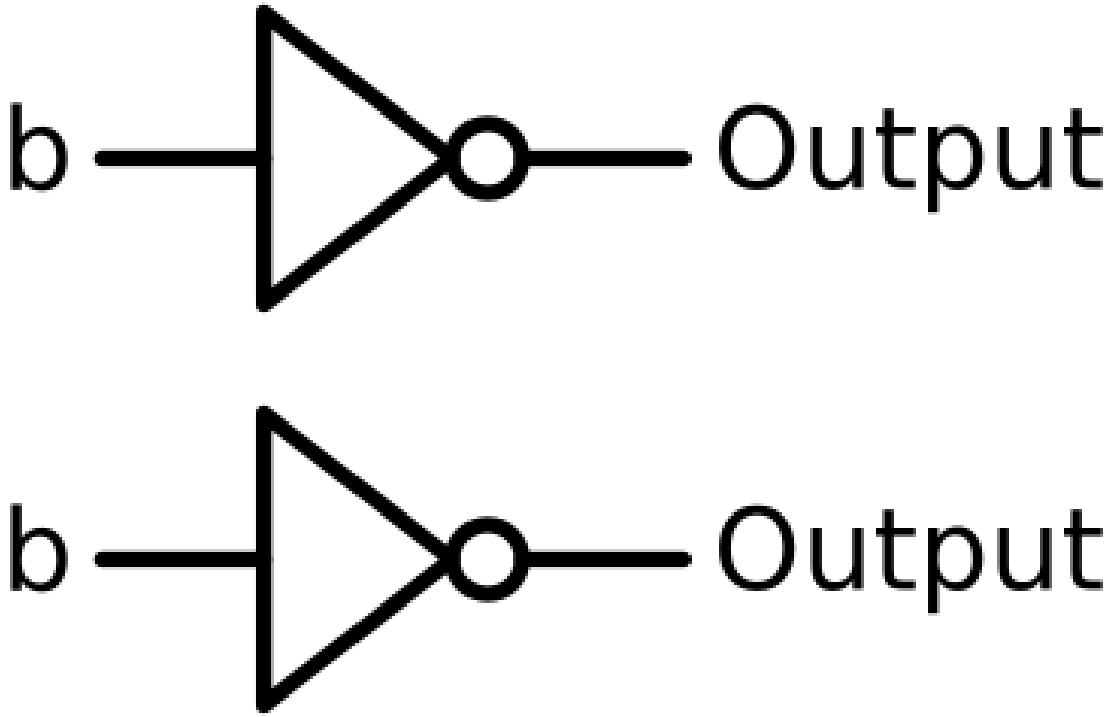
Expression 1: (not b)

Expression 2: (not b)

Options:

1. Yes

2. No




Correct Answer: yes

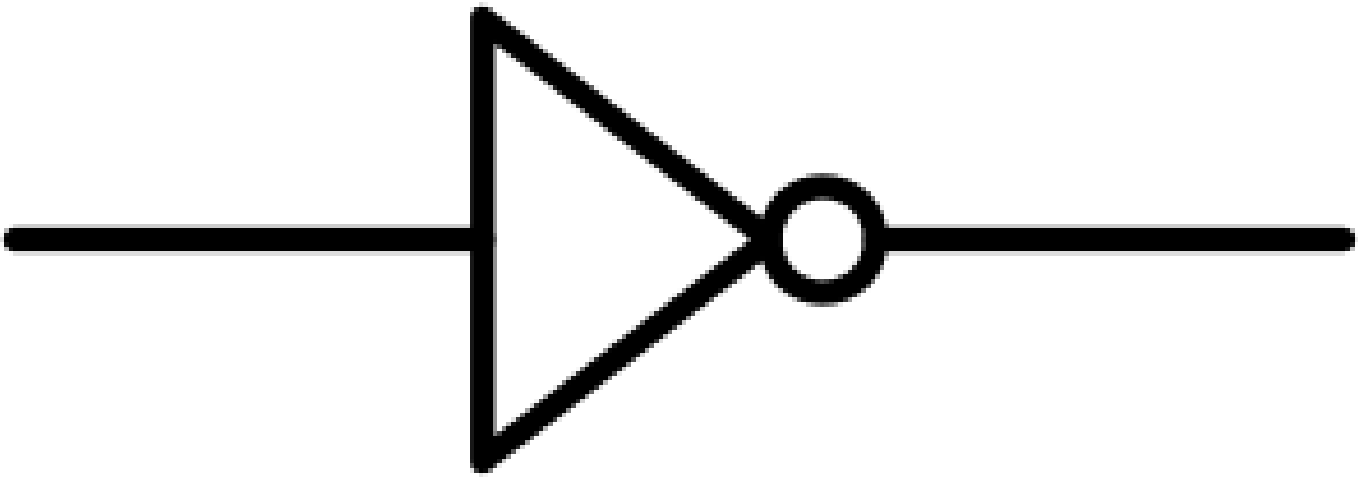
## Question 43:

What is the output of the NOT gate with input 0?

Options:

1. 0

2. 1



Correct Answer: 1

Question 44:

Are these two circuits equivalent?

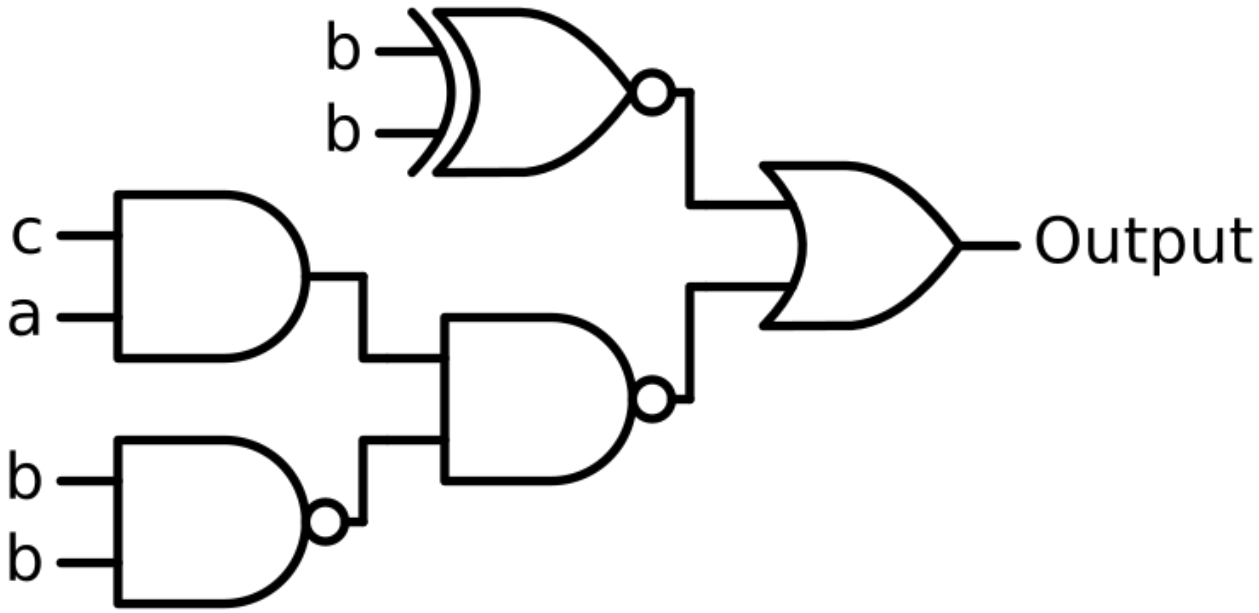
Expression 1: ((not (b xor b)) or ((c and a) nand (b nand b)))

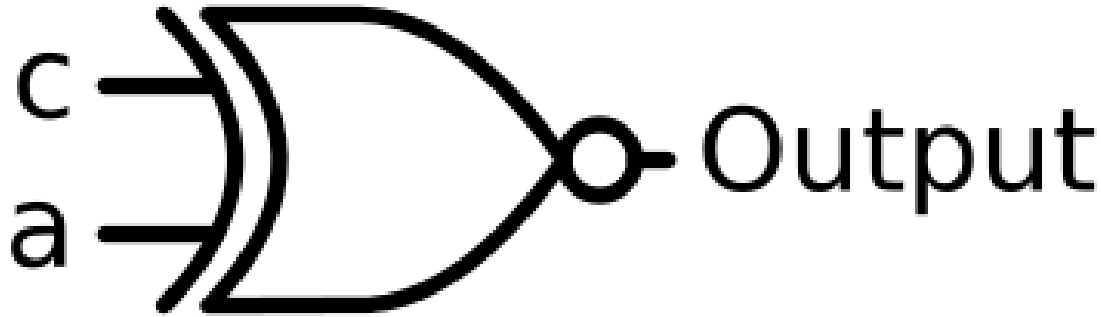
Expression 2: (c xnor a)

Options:

1. Yes

2. No




Correct Answer: no

Question 45:

Are these two circuits equivalent?

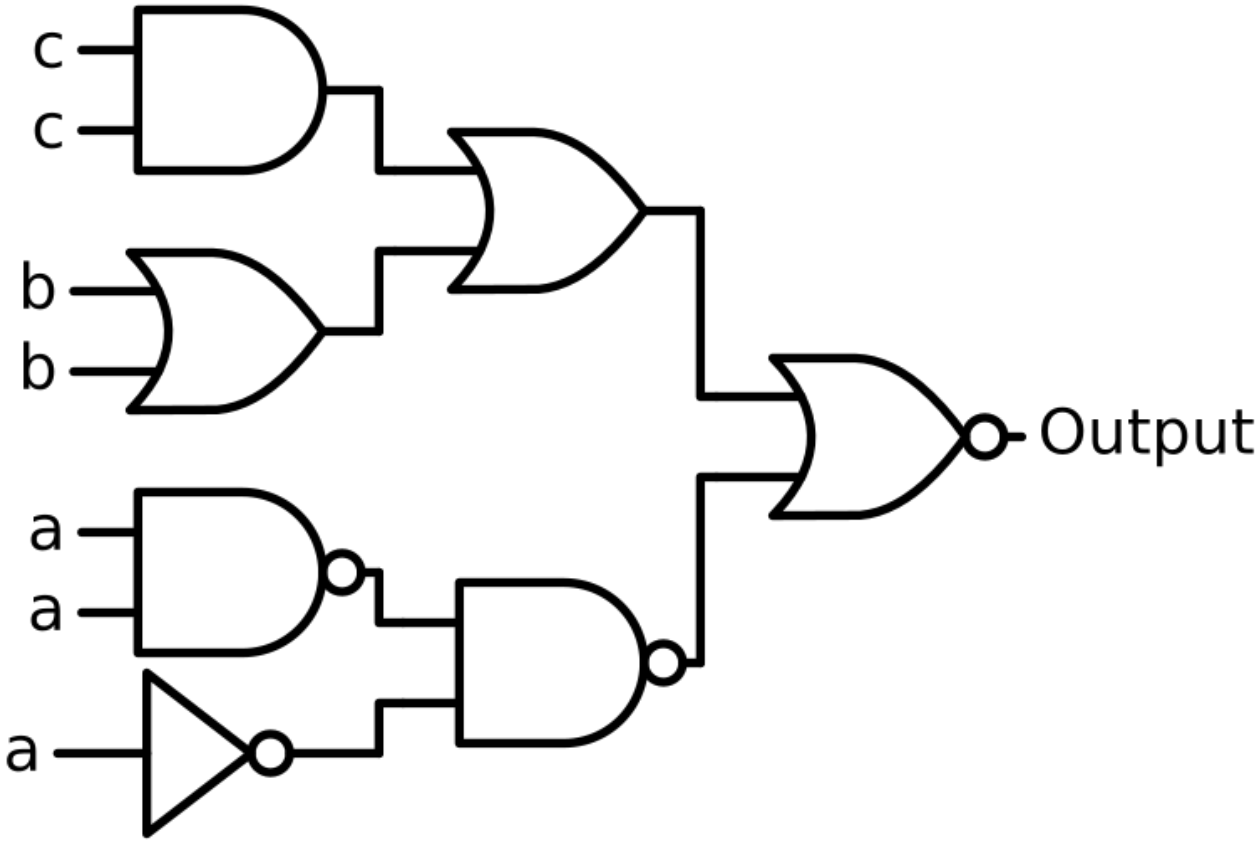
Expression 1: (((c and c) or (b or b)) nor ((a nand a) nand (not a)))

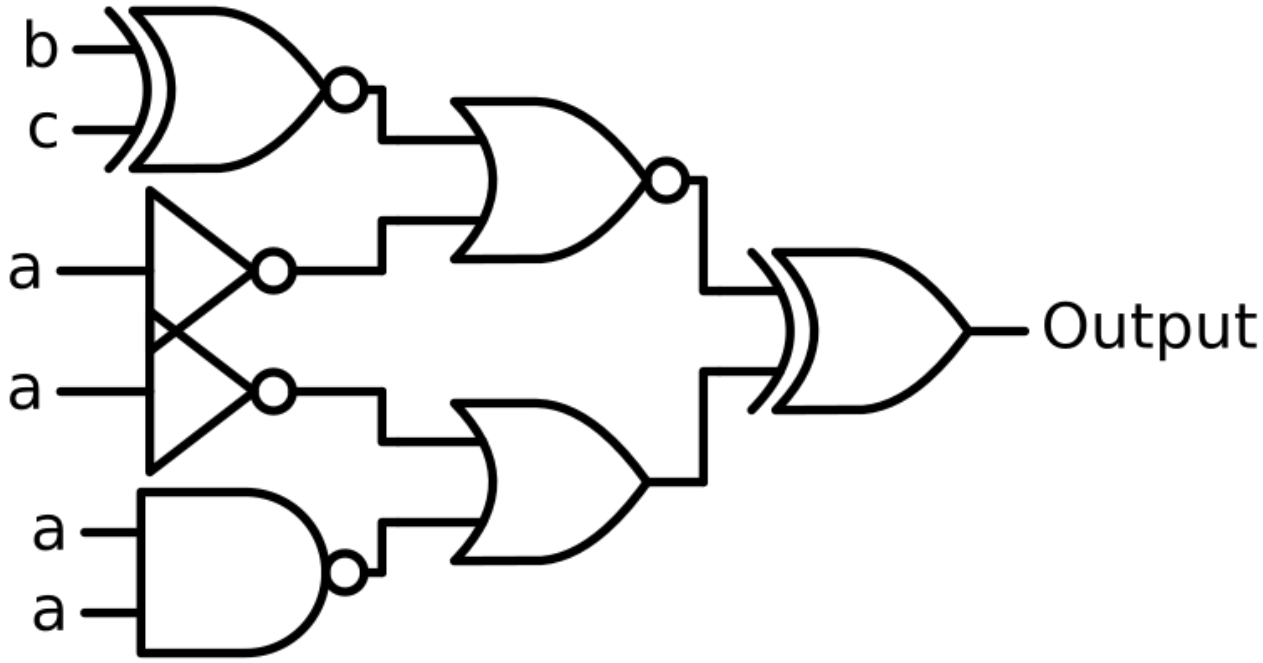
Expression 2: (((b xnor c) nor (not a)) xor ((not a) or (a nand a)))

Options:

1. Yes

2. No






Correct Answer: no

Question 46:

Are these two circuits equivalent?

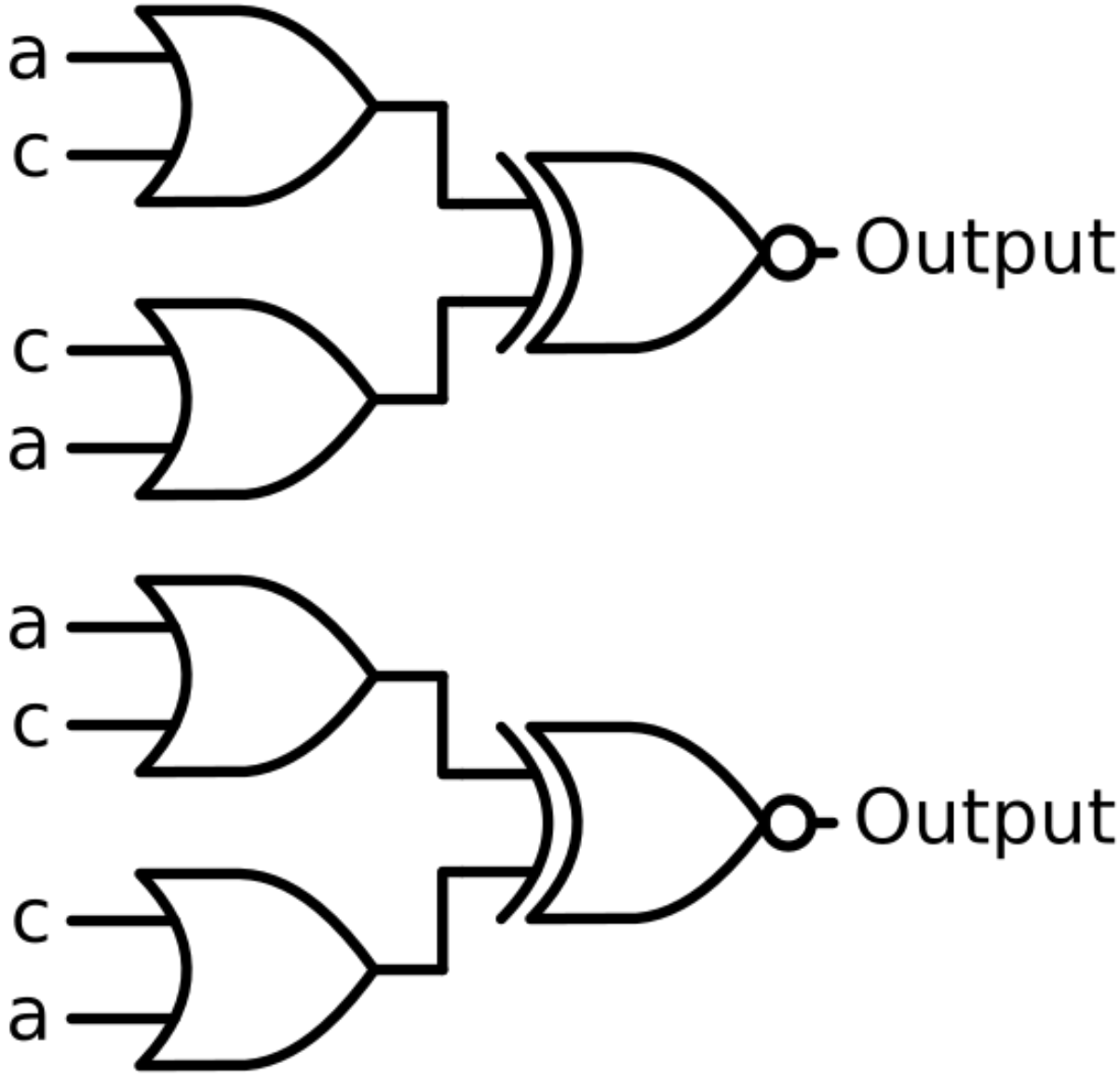
Expression 1: ((a or c) xnor (c or a))

Expression 2: ((a or c) xnor (c or a))

Options:

1. Yes

2. No




Correct Answer: yes

Question 47:

Are these two circuits equivalent?

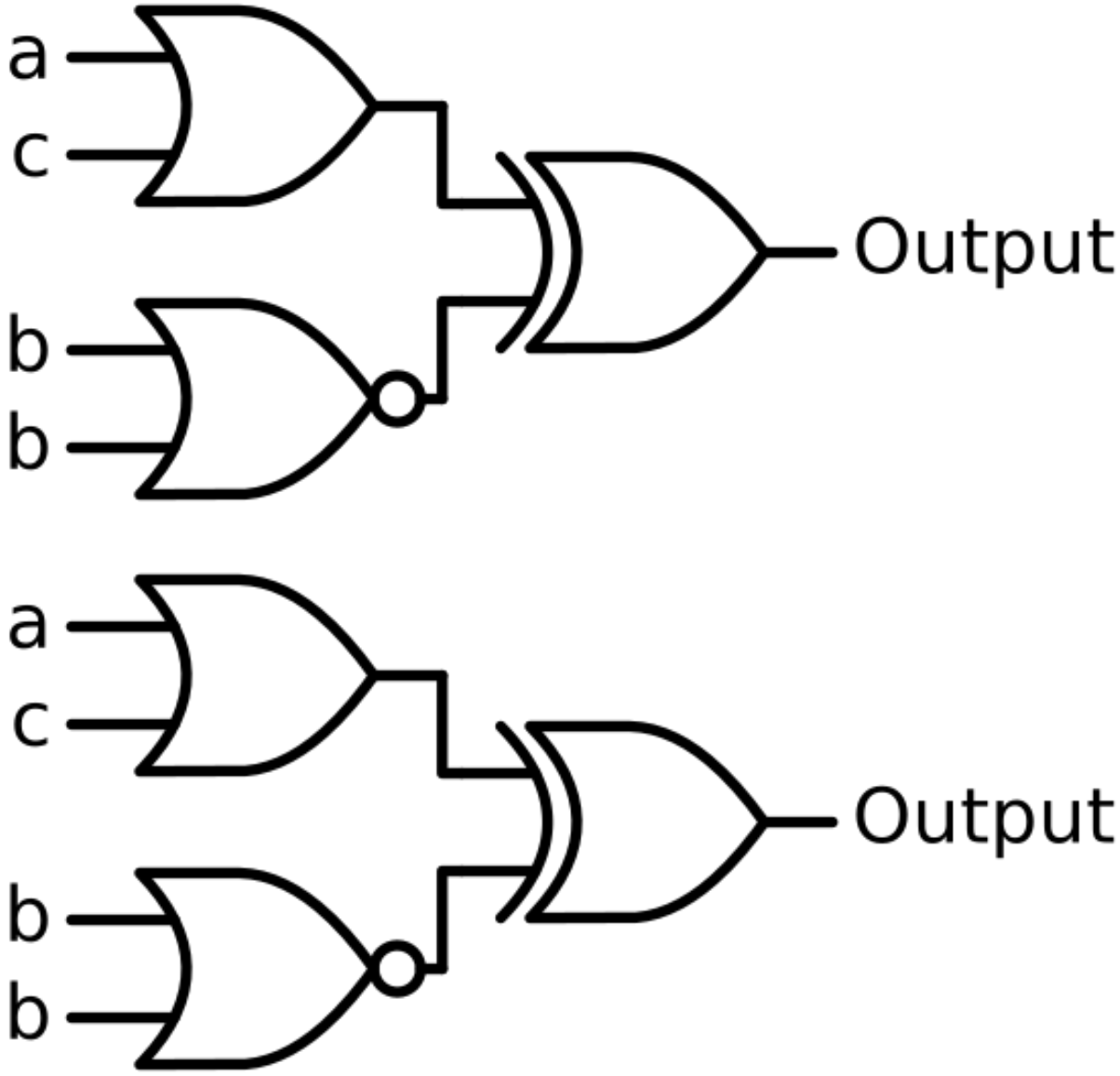
Expression 1: (not ((a or c) xnor (b nor b)))

Expression 2: (not ((a or c) xnor (b nor b)))

Options:

1. Yes

2. No




Correct Answer: yes

Question 48:

Are these two circuits equivalent?

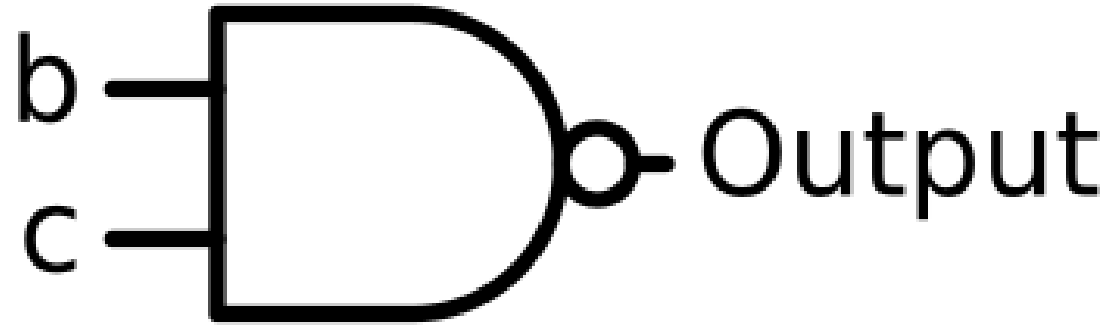
Expression 1: (b nand c)

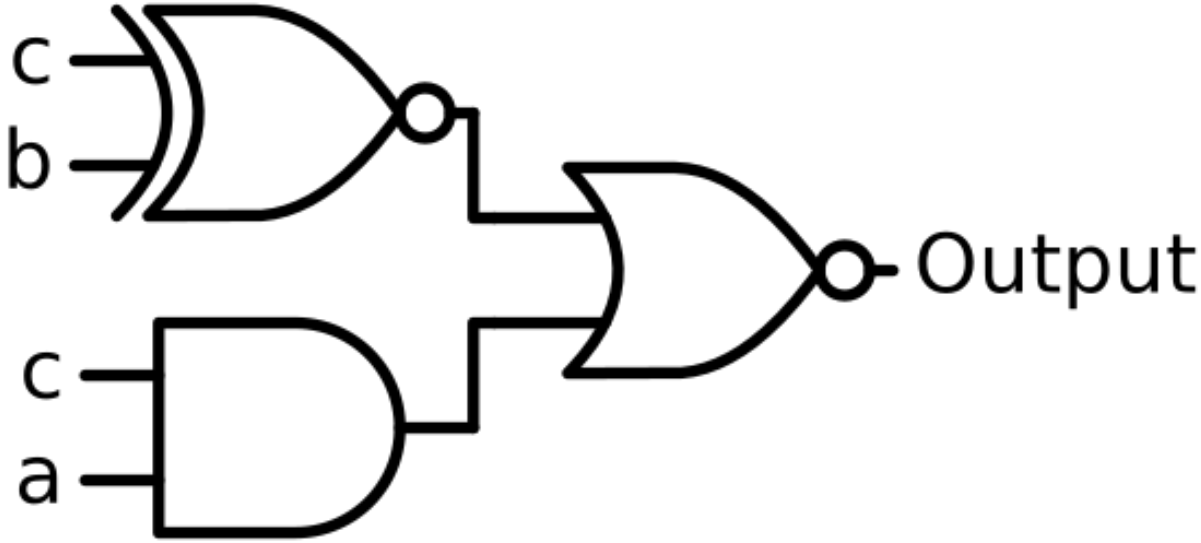
Expression 2: ((c xnor b) nor (c and a))

Options:

1. Yes

2. No




Correct Answer: no

Question 49:

Are these two circuits equivalent?

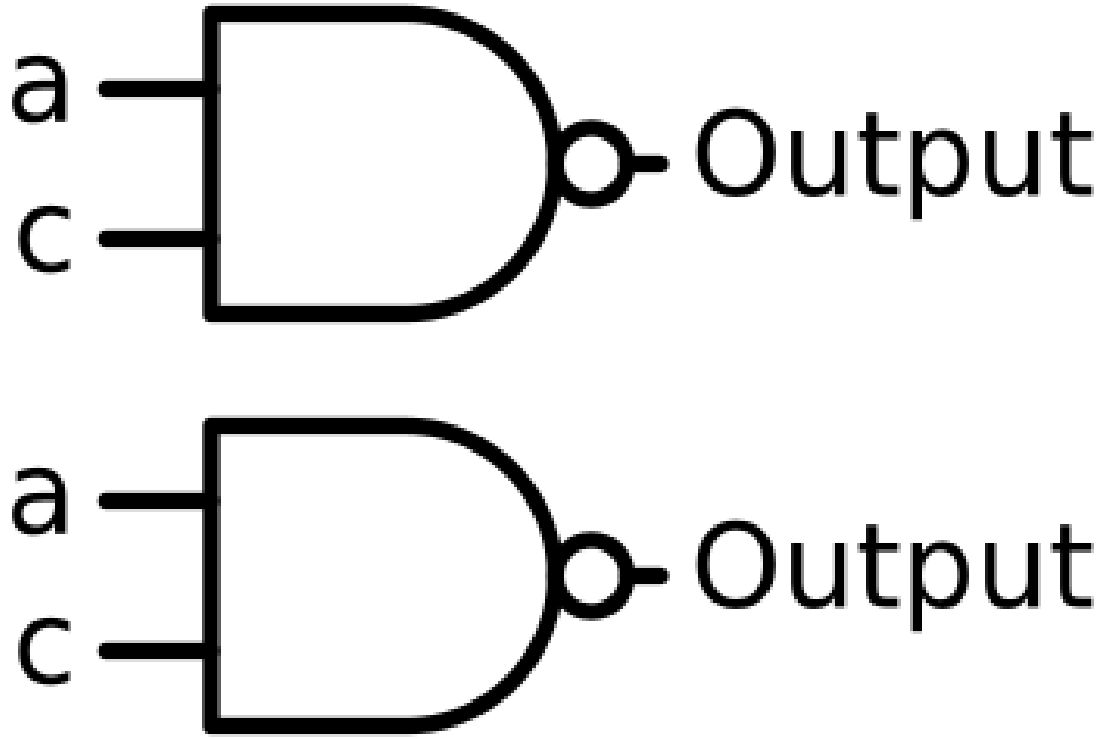
Expression 1: (a nand c)

Expression 2: (a nand c)

Options:

1. Yes

2. No




Correct Answer: yes

Question 50:

Are these two circuits equivalent?

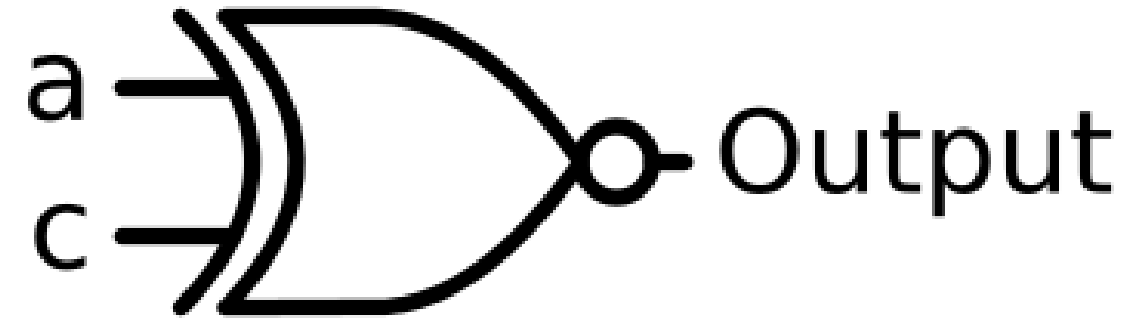
Expression 1: (a xnor c)

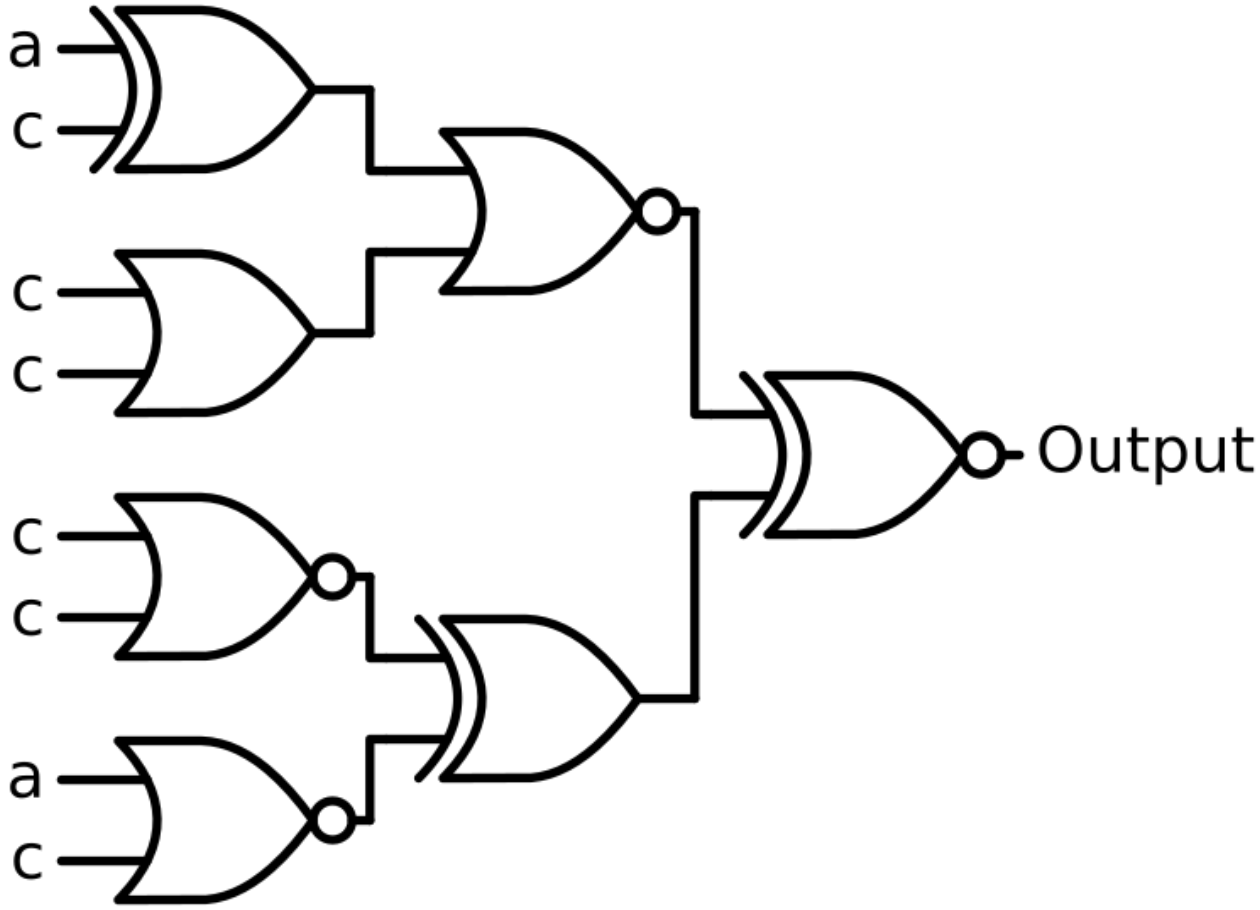
Expression 2: (((a xor c) nor (c or c)) xnor ((c nor c) xor (a nor c)))

Options:

1. Yes

2. No




Correct Answer: no