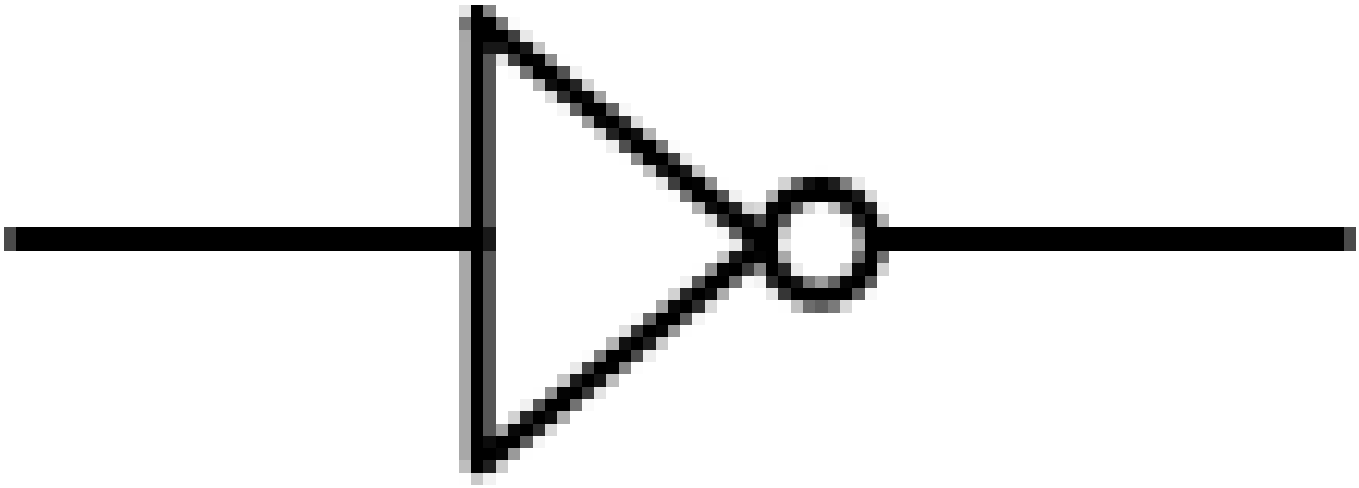
Question 1:

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



Options:

1. 1

2. 0

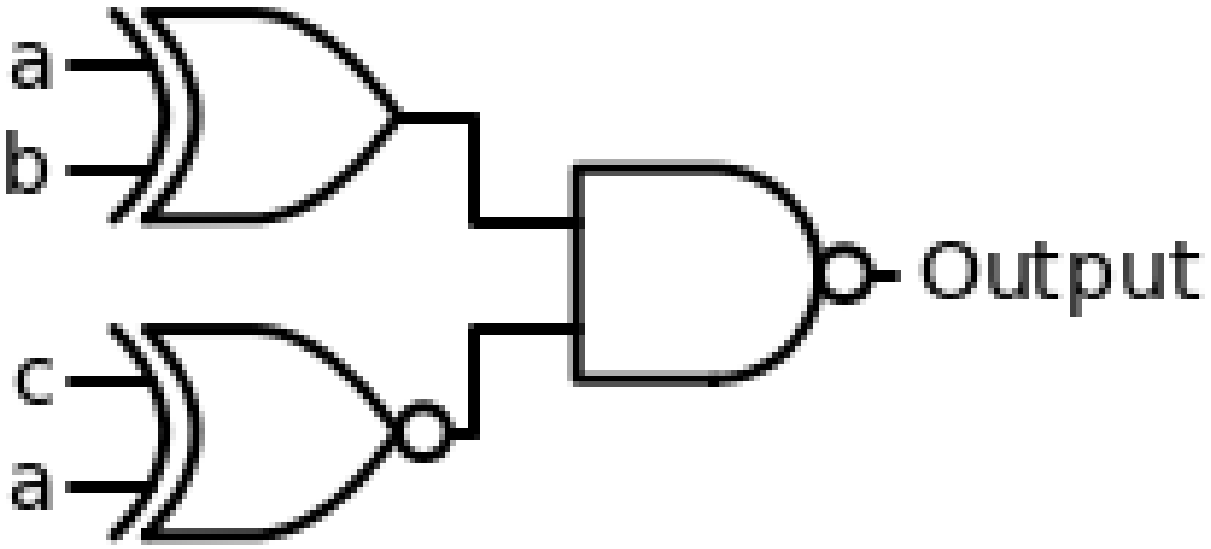
Correct Answer: 1

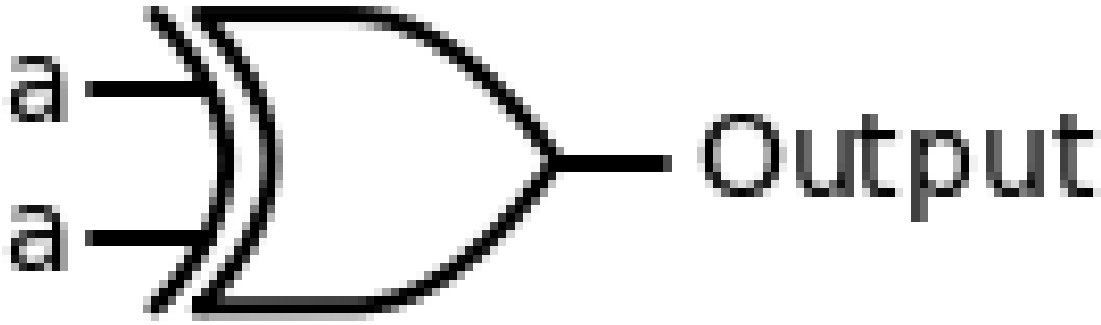
Question 2:

Are these two circuits equivalent?

Expression 1: ((a xor b) nand (c xnor a))

Expression 2: (a xor a)





Options:

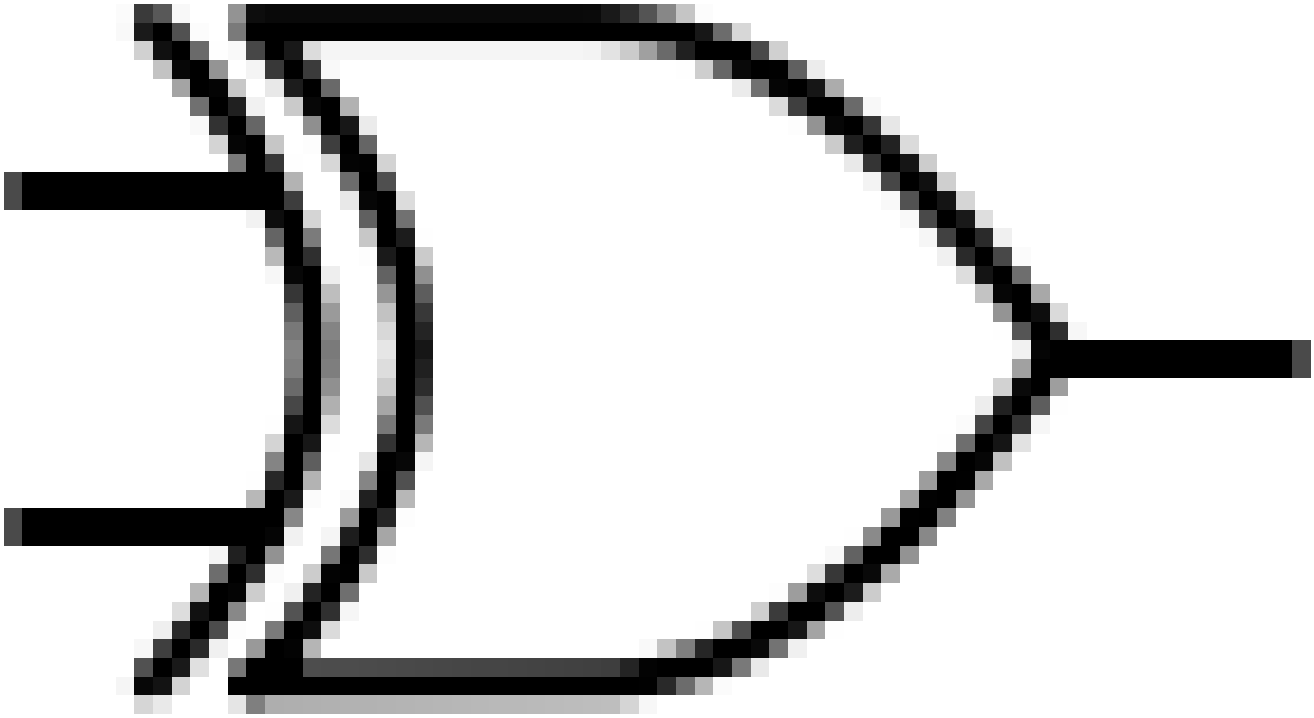
1. Yes

2. No

Correct Answer: no

Question 3:

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



Options:

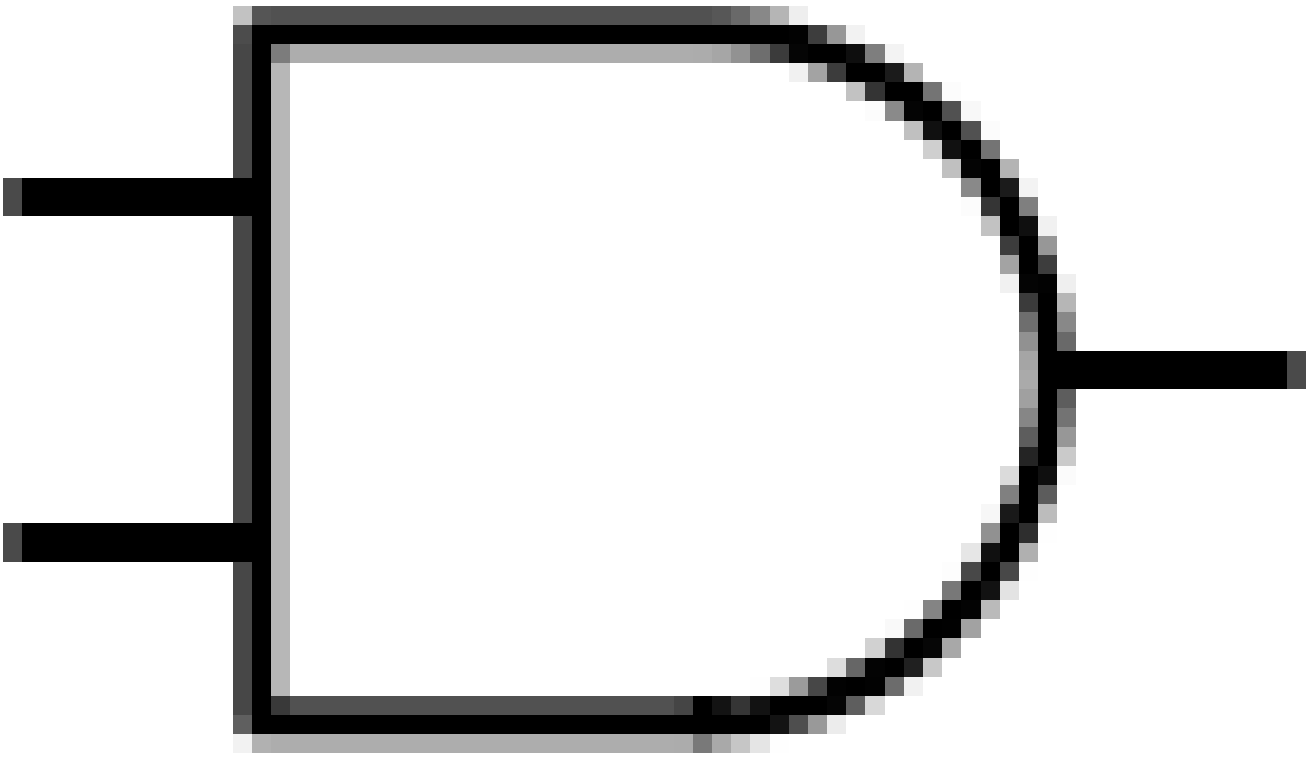
1. 1

2. 0

Correct Answer: 1

Question 4:

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



Options:

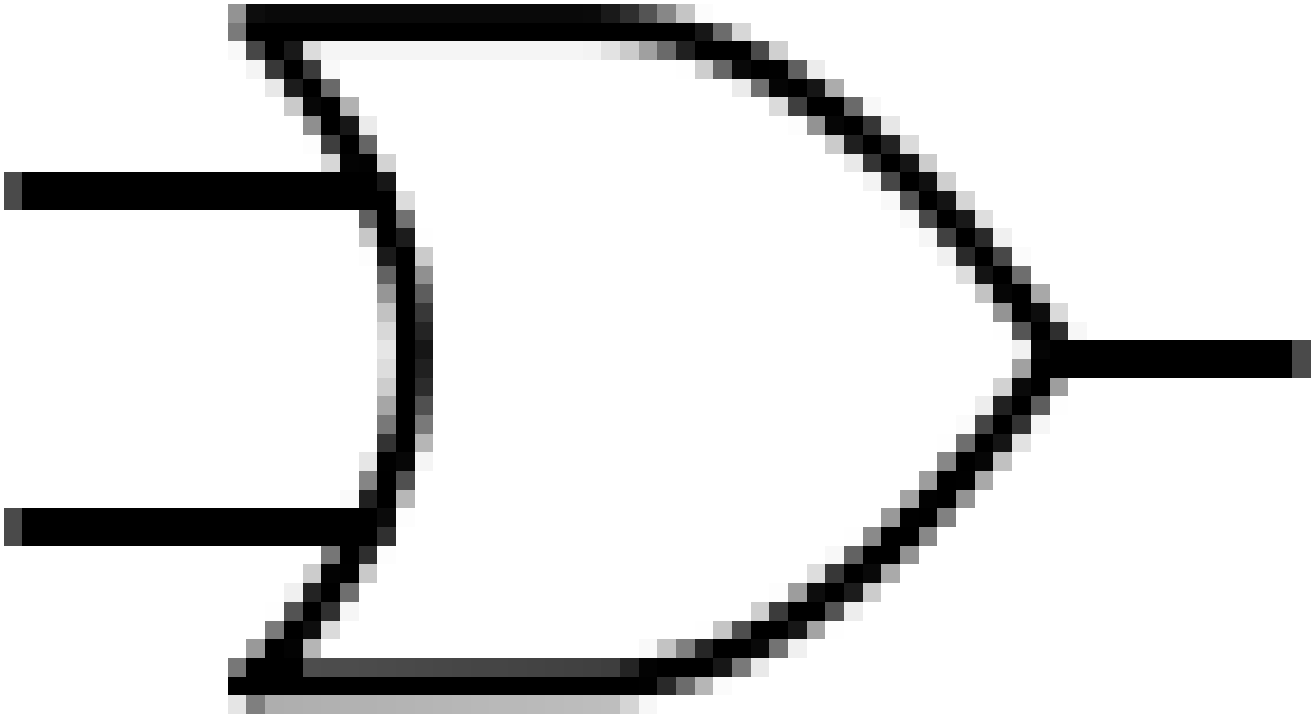
1. 1

2. 0

Correct Answer: 1

Question 5:

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



Options:

1. 1

2. 0

Correct Answer: 0

Question 6:

Are these two circuits equivalent?

Expression 1: (c xnor b)

Expression 2: (c xnor b)

Options:

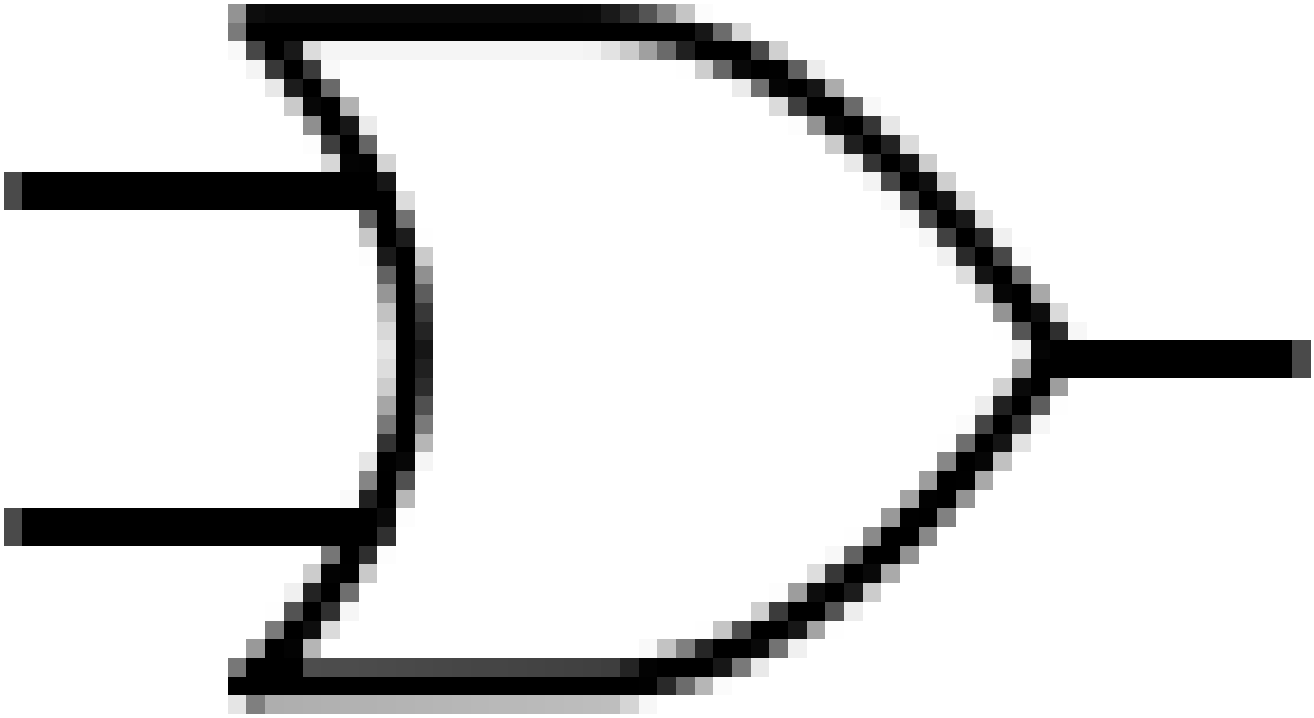
1. Yes

2. No

Correct Answer: yes

Question 7:

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



Options:

1. 0

2. 1

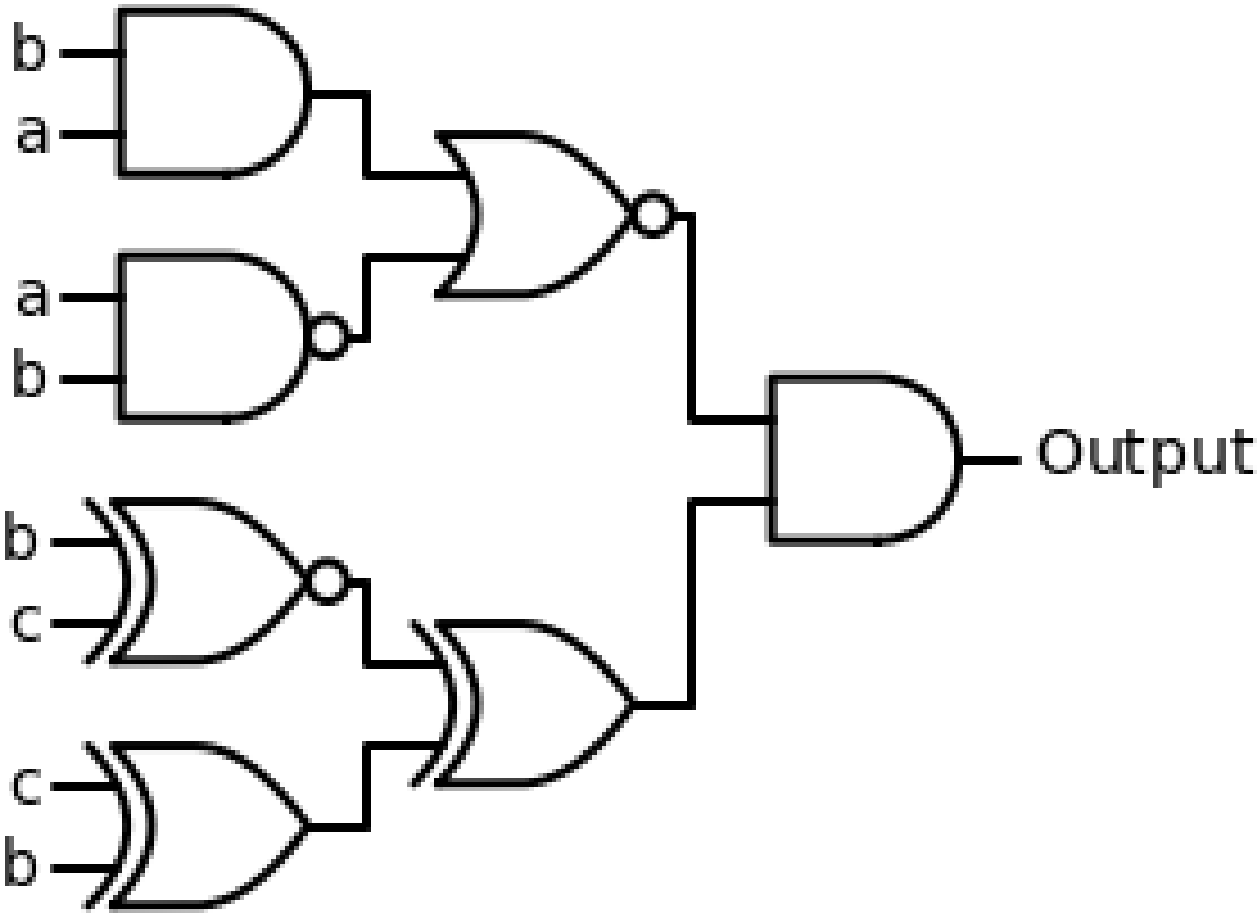
Correct Answer: 0

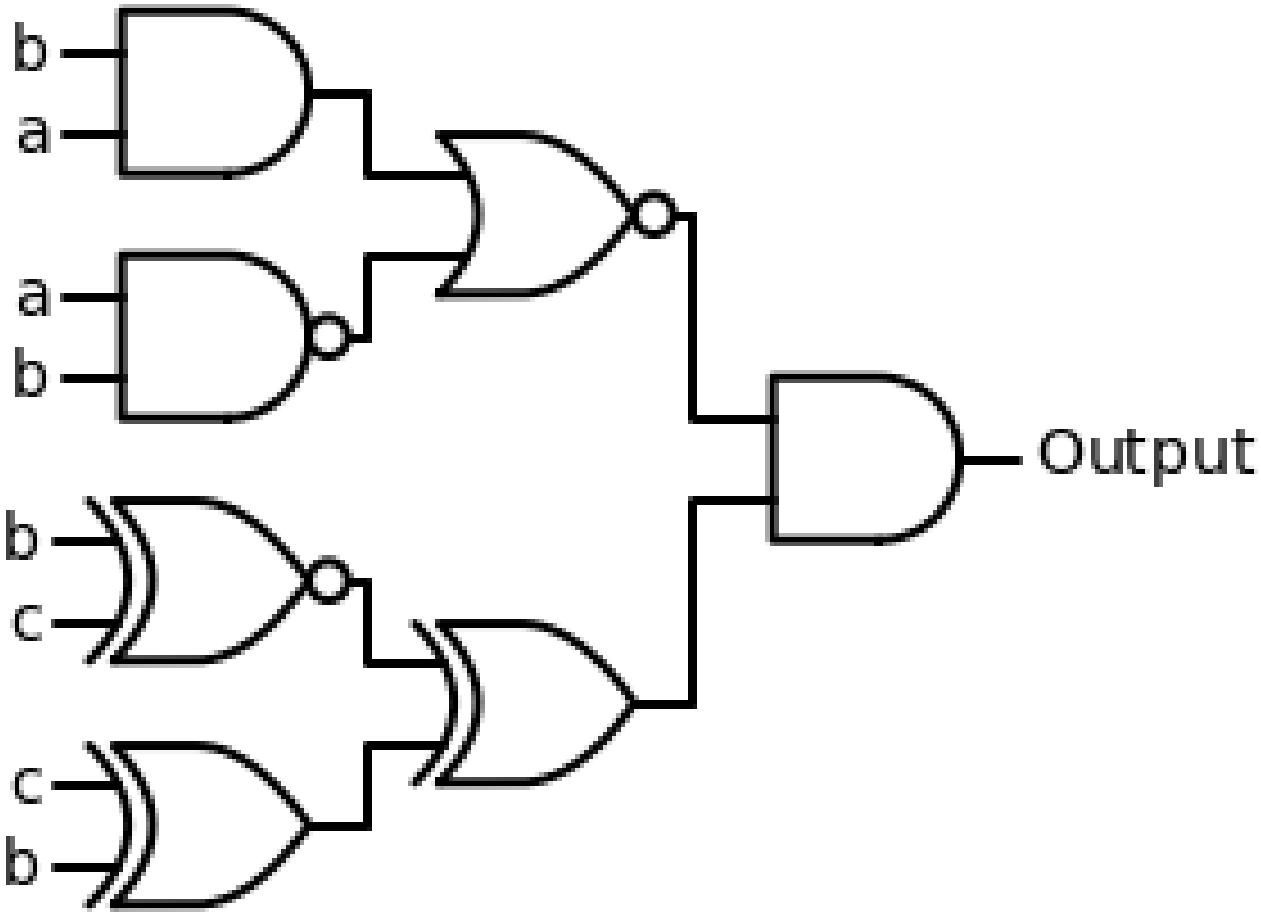
Question 8:

Are these two circuits equivalent?

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

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





Options:

1. Yes

2. No

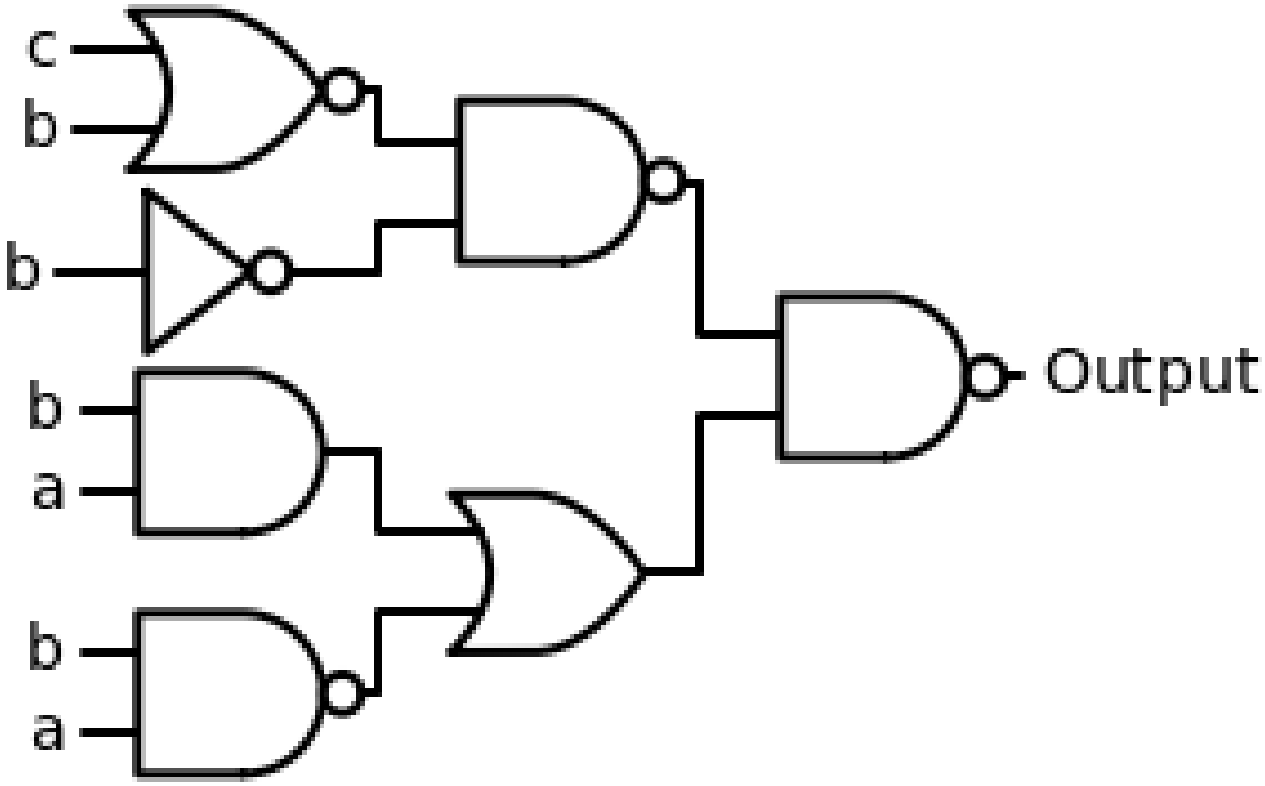
Correct Answer: yes

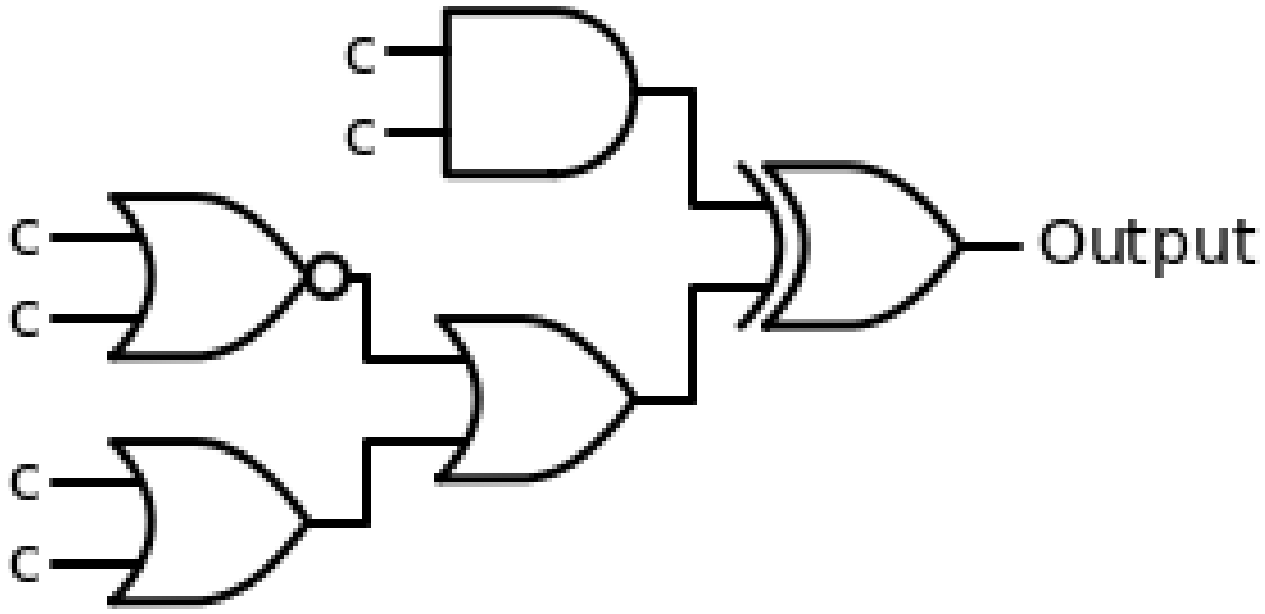
Question 9:

Are these two circuits equivalent?

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

Expression 2: ((not (c nand c)) xor ((c nor c) or (c or c)))





Options:

1. Yes

2. No

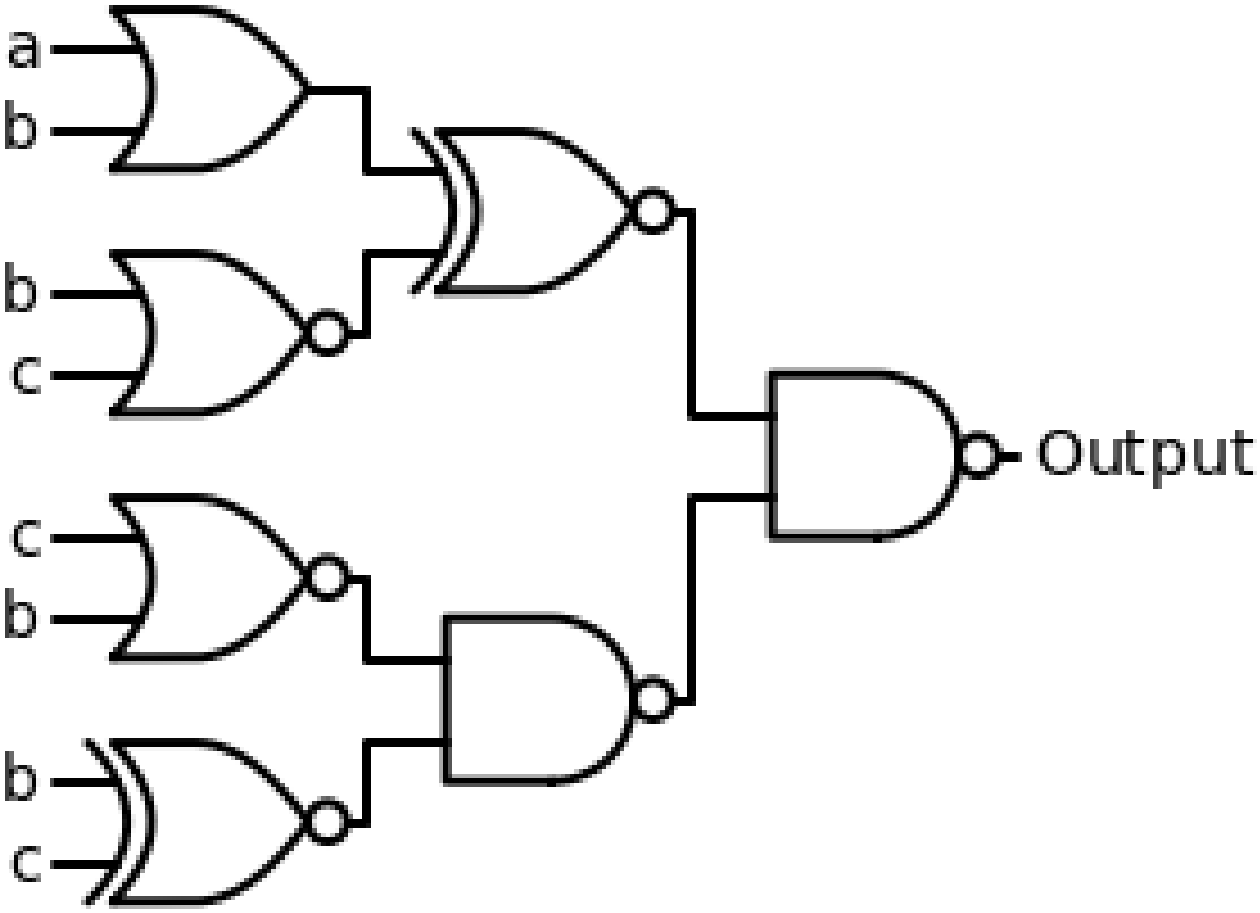
Correct Answer: no

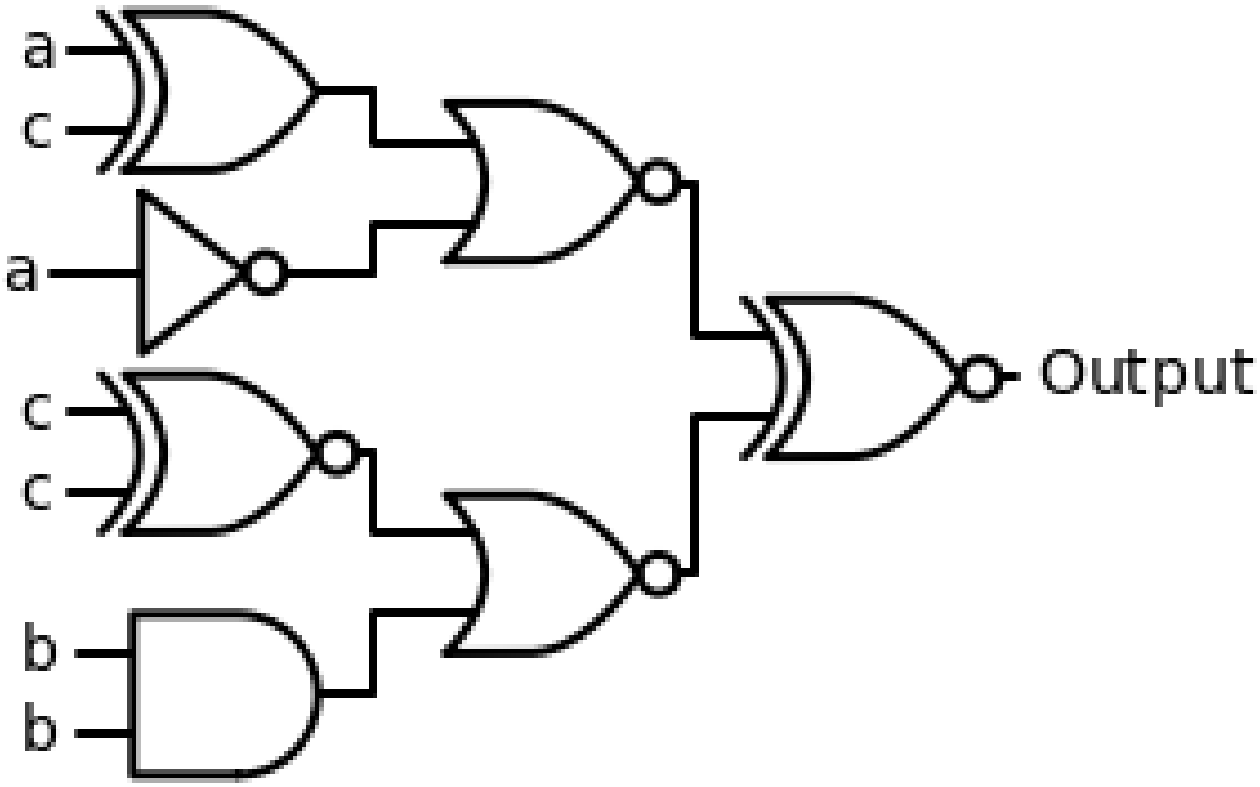
Question 10:

Are these two circuits equivalent?

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

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





Options:

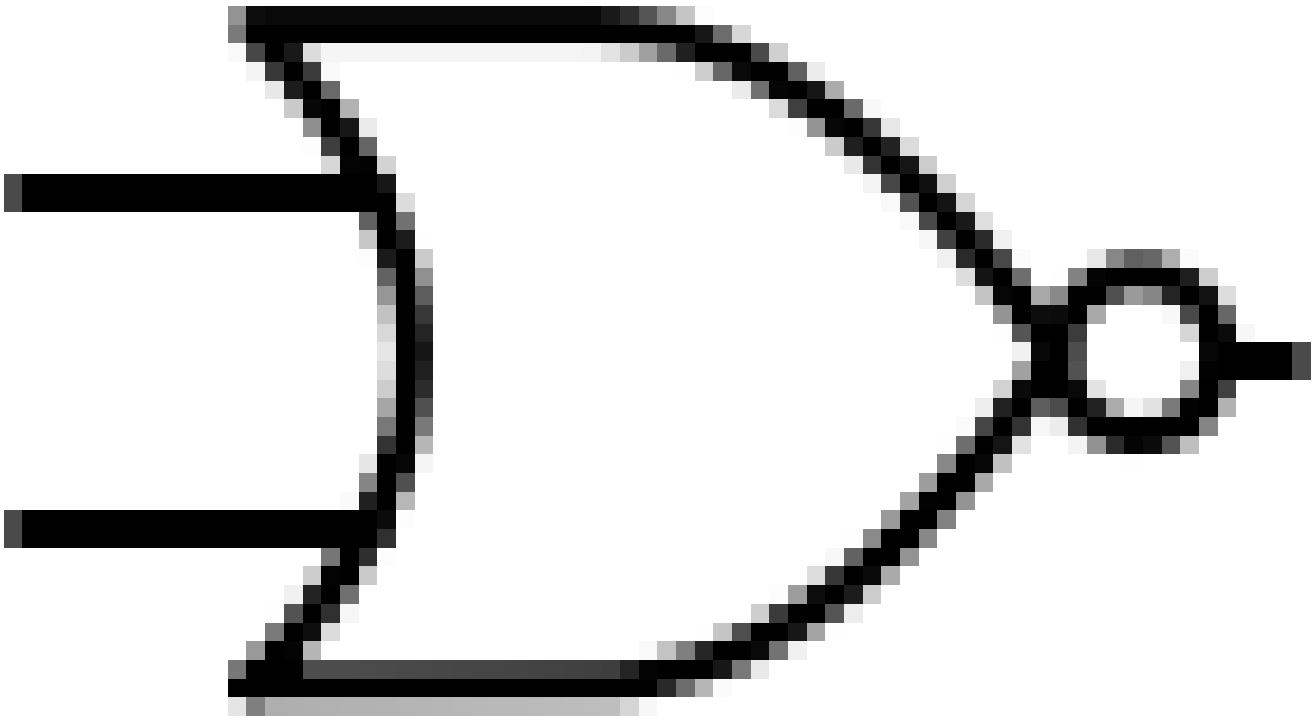
1. Yes

2. No

Correct Answer: no

Question 11:

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



Options:

1. 0

2. 1

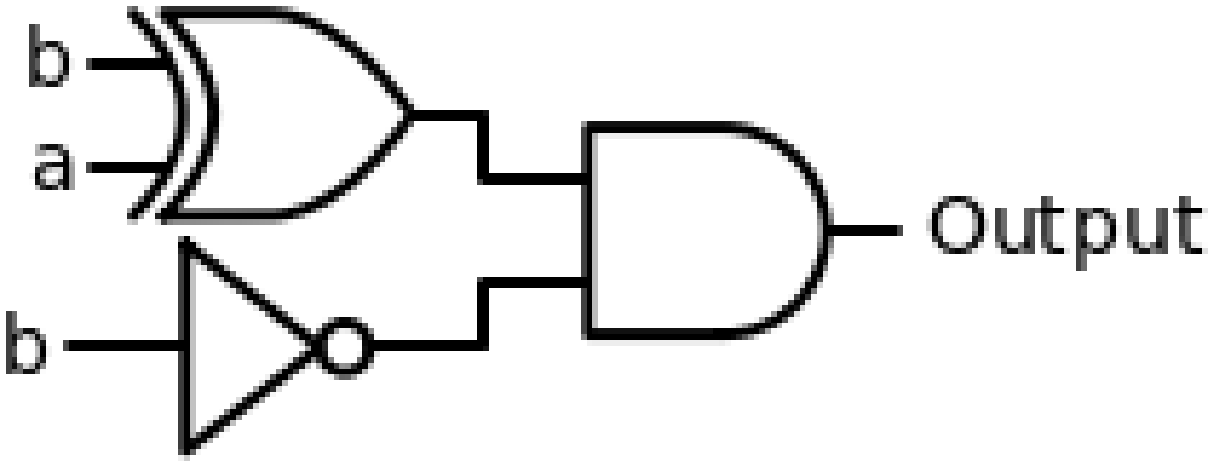
Correct Answer: 0

Question 12:

Are these two circuits equivalent?

Expression 1: (c nand b)

Expression 2: ((b xor a) and (not b))



Options:

1. Yes

2. No

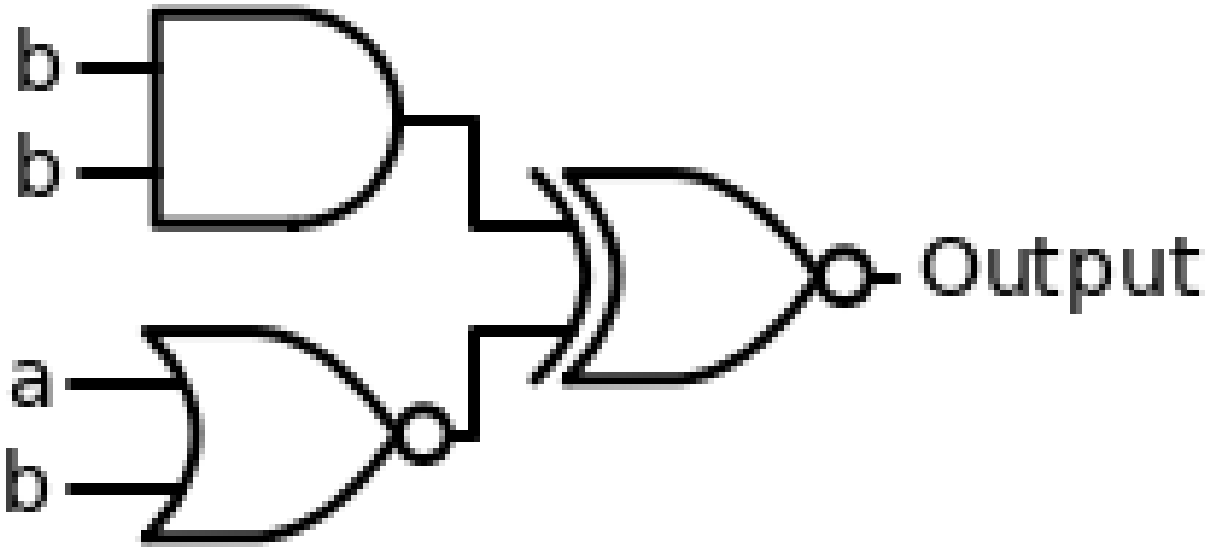
Correct Answer: no

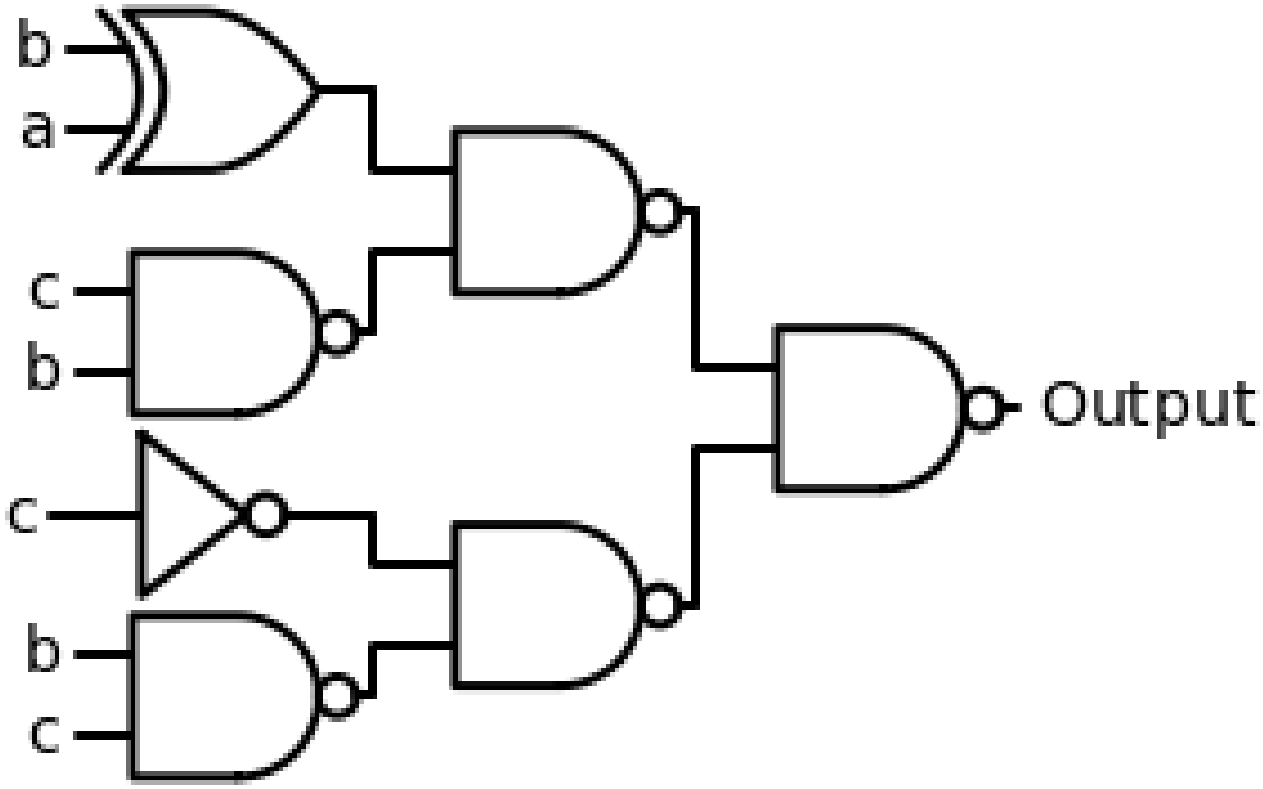
Question 13:

Are these two circuits equivalent?

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

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





Options:

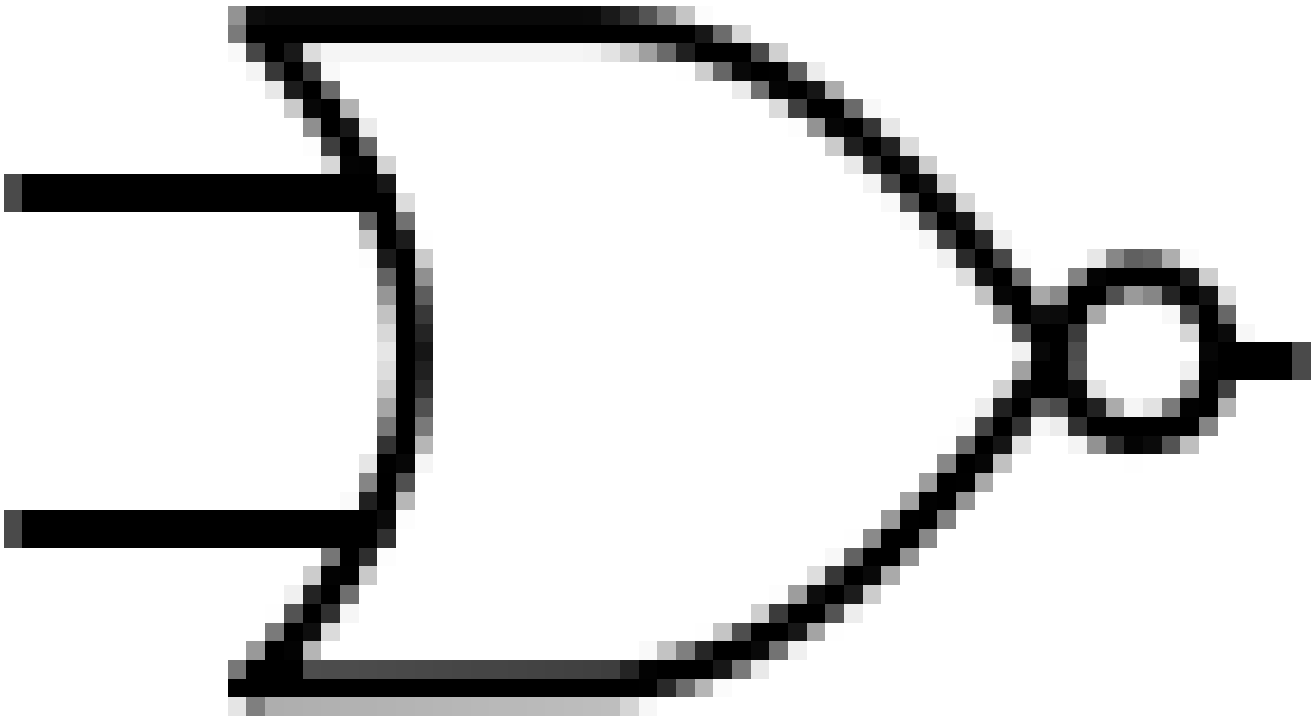
1. Yes

2. No

Correct Answer: no

Question 14:

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



Options:

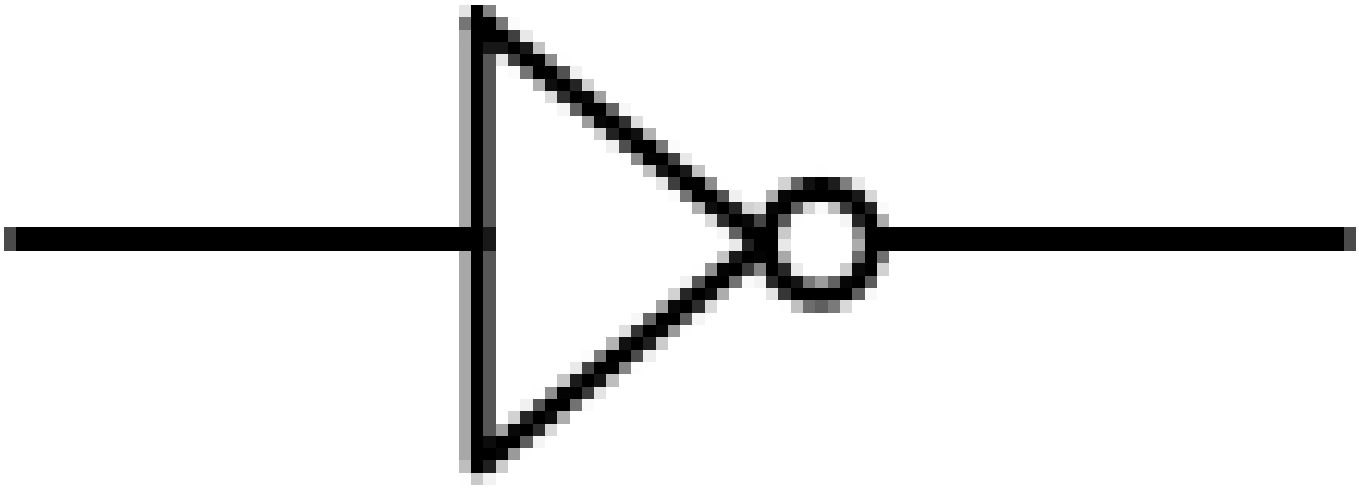
1. 0

2. 1

Correct Answer: 0

Question 15:

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



Options:

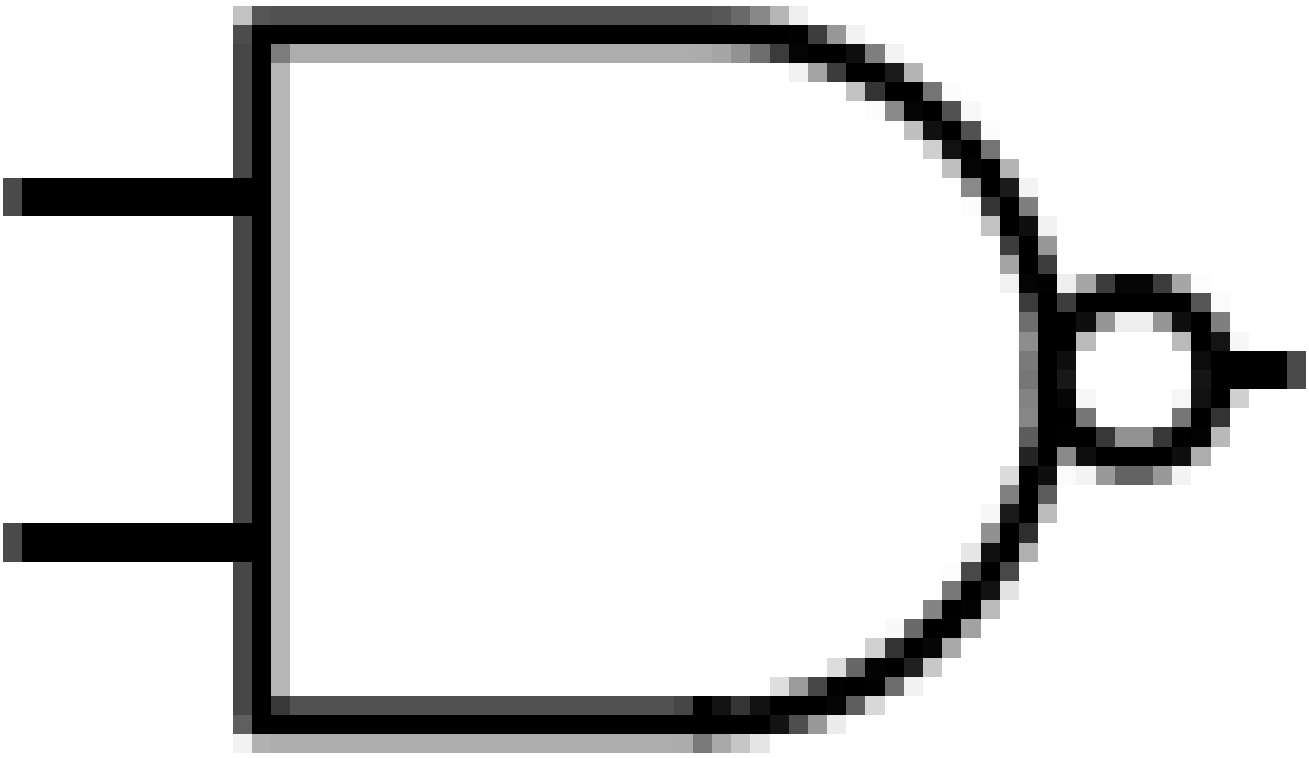
1. 1

2. 0

Correct Answer: 0

Question 16:

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



Options:

1. 1

2. 0

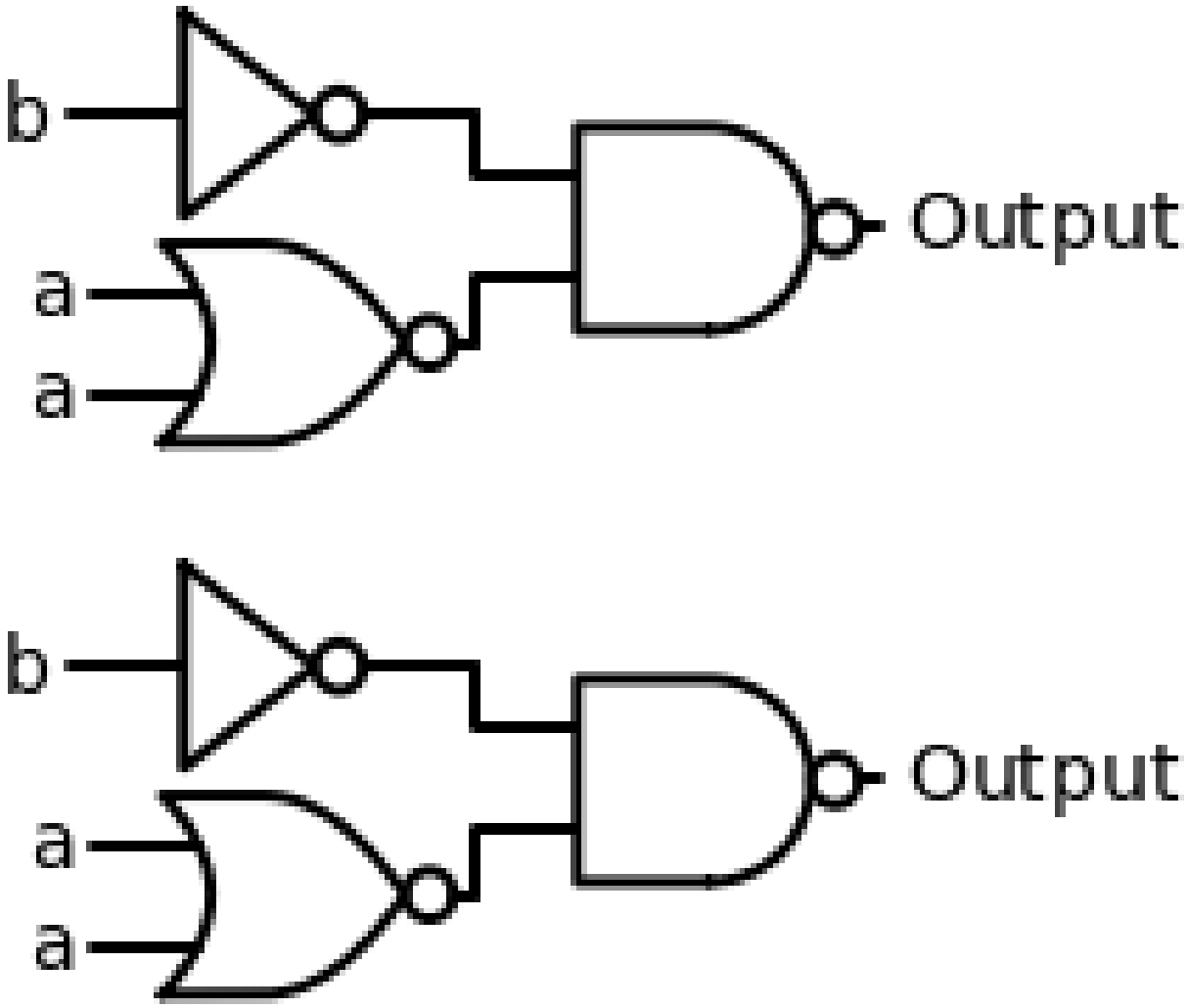
Correct Answer: 1

Question 17:

Are these two circuits equivalent?

Expression 1: ((not b) nand (a nor a))

Expression 2: ((not b) nand (a nor a))



Options:

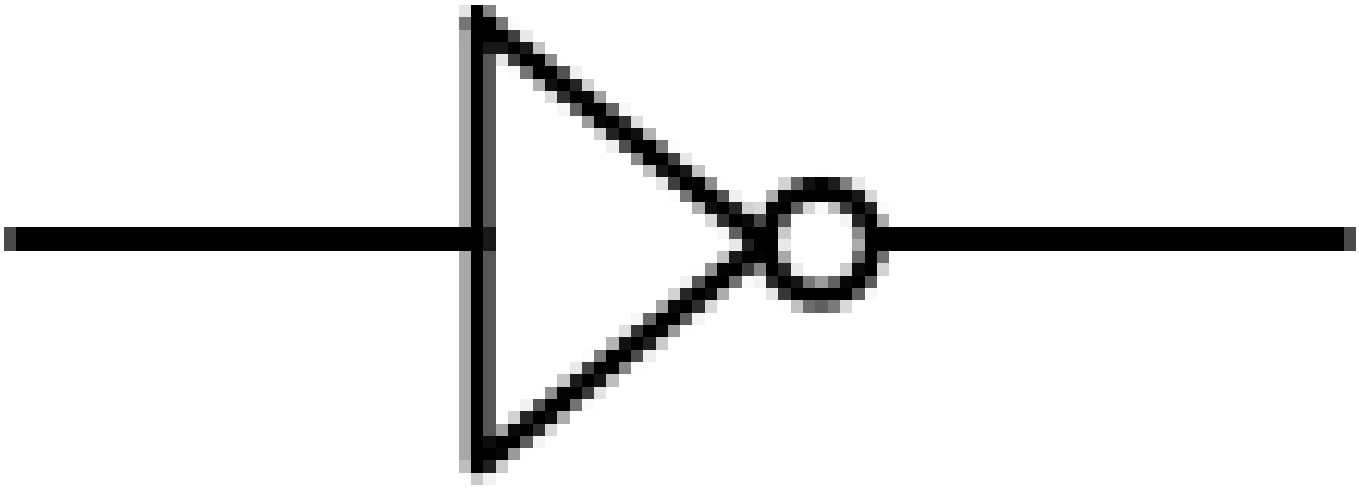
1. Yes

2. No

Correct Answer: yes

Question 18:

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



Options:

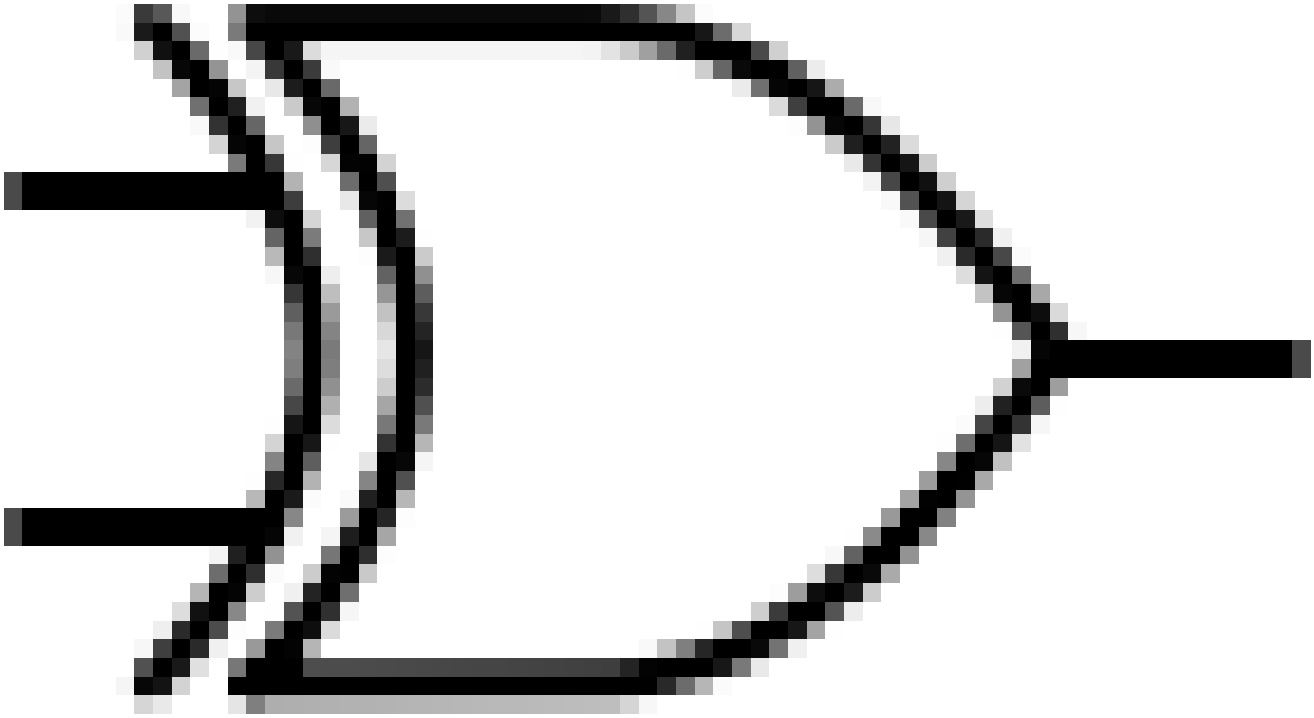
1. 1

2. 0

Correct Answer: 1

Question 19:

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



Options:

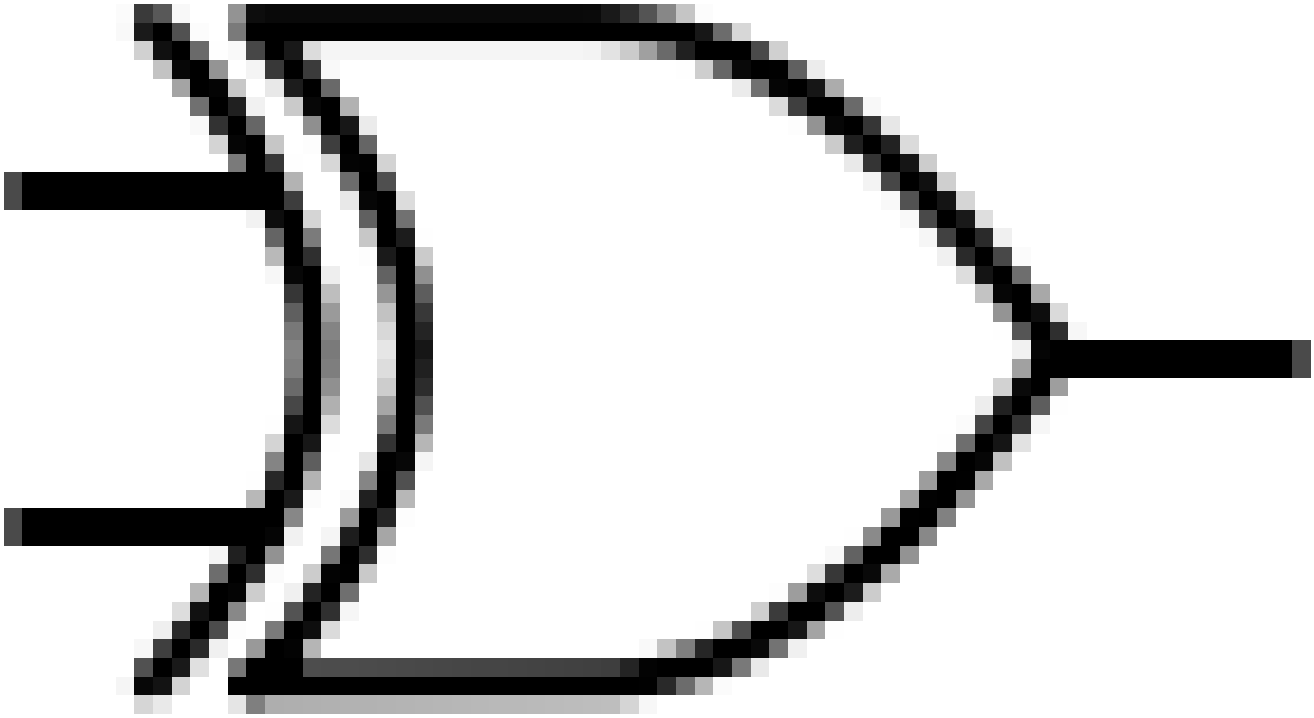
1. 0

2. 1

Correct Answer: 0

Question 20:

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



Options:

1. 1

2. 0

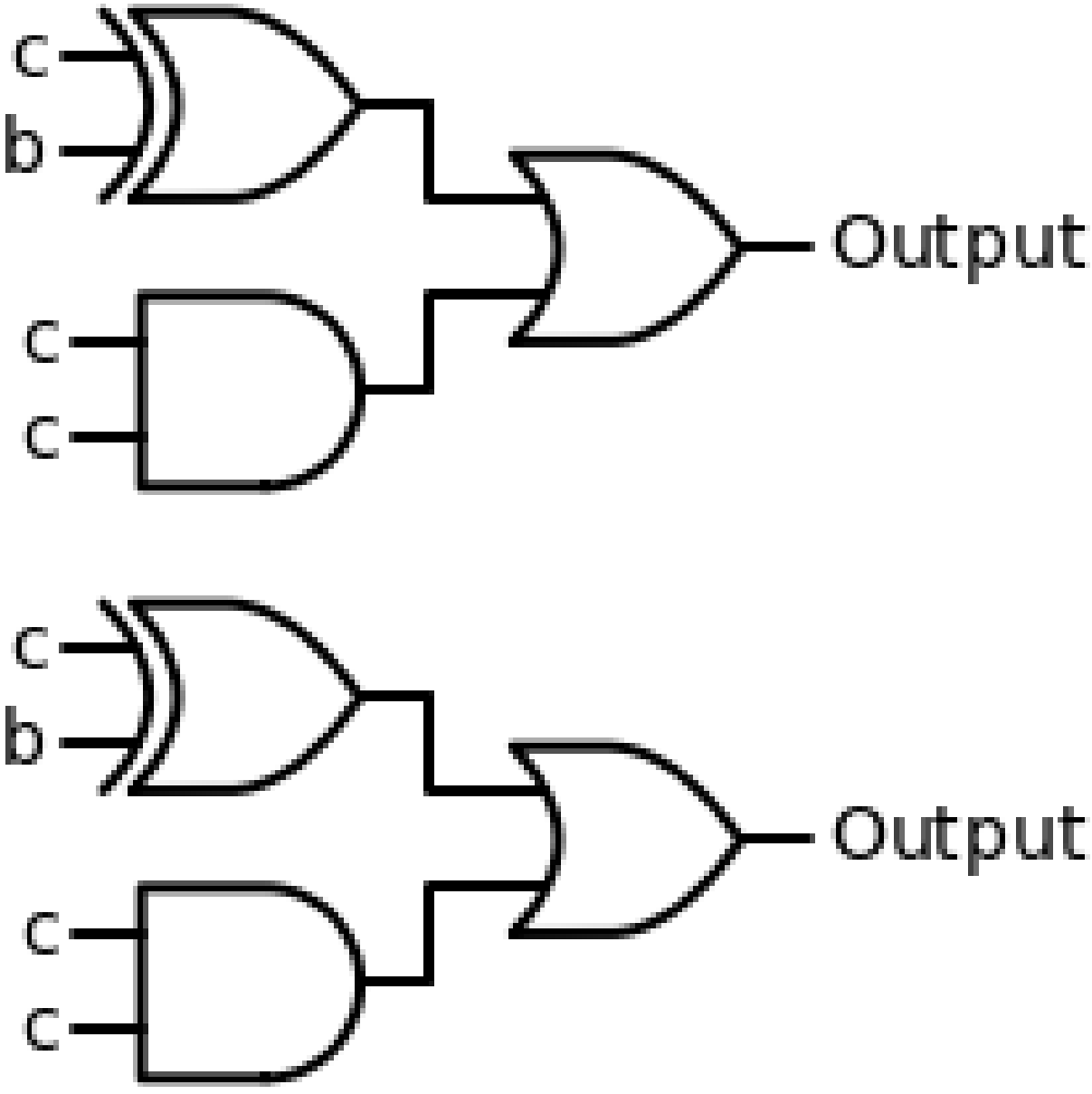
Correct Answer: 0

Question 21:

Are these two circuits equivalent?

Expression 1: ((c xor b) or (c and c))

Expression 2: ((c xor b) or (c and c))



Options:

1. Yes

2. No

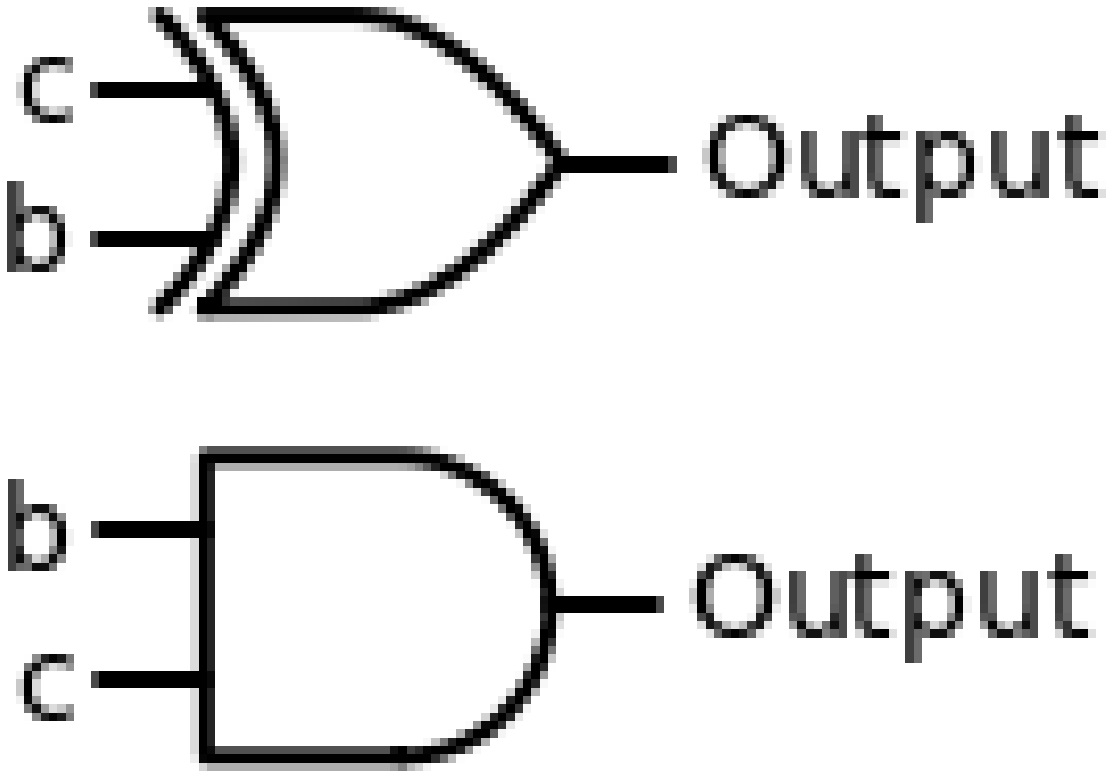
Correct Answer: yes

Question 22:

Are these two circuits equivalent?

Expression 1: (c xor b)

Expression 2: (b and c)



Options:

1. Yes

2. No

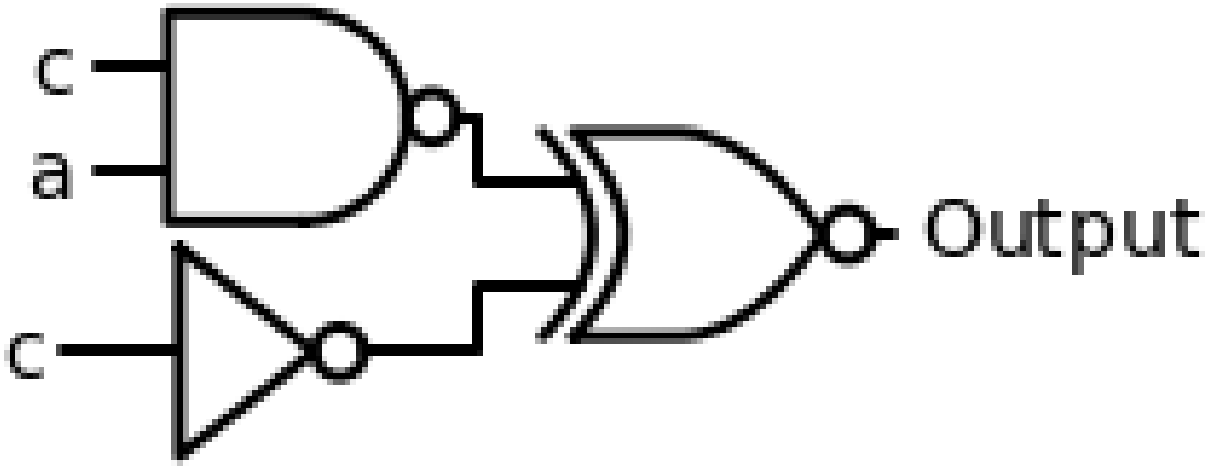
Correct Answer: no

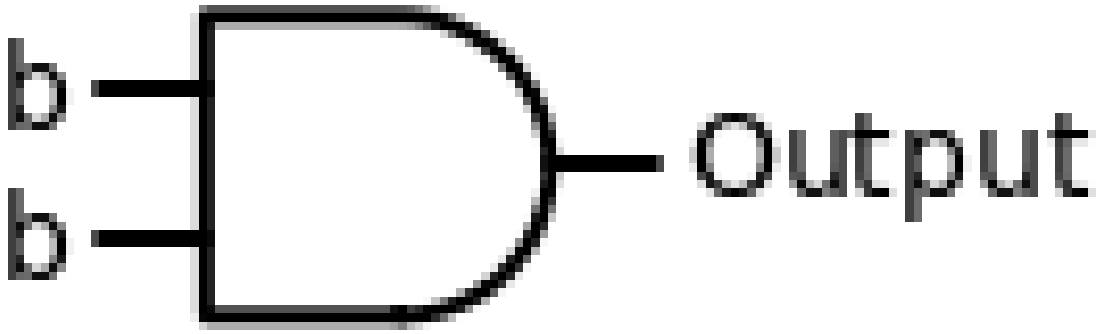
Question 23:

Are these two circuits equivalent?

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

Expression 2: (b and b)





Options:

1. Yes

2. No

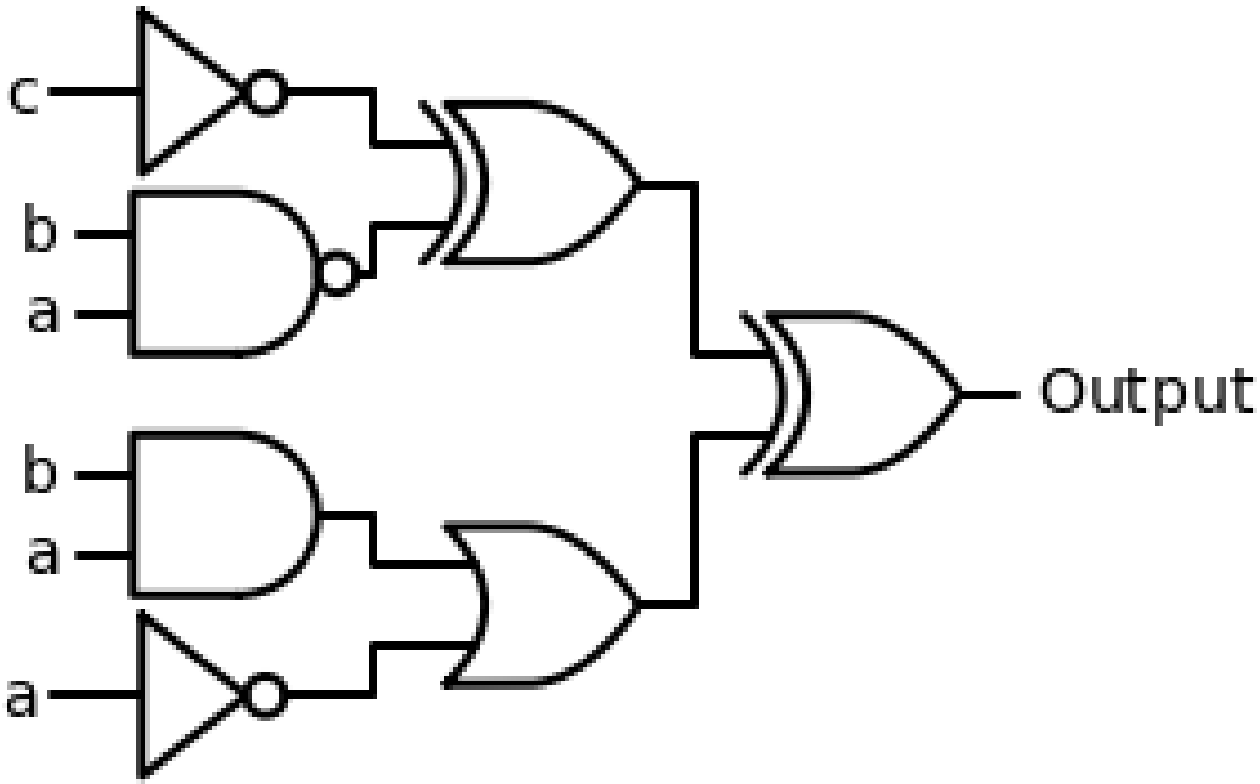
Correct Answer: no

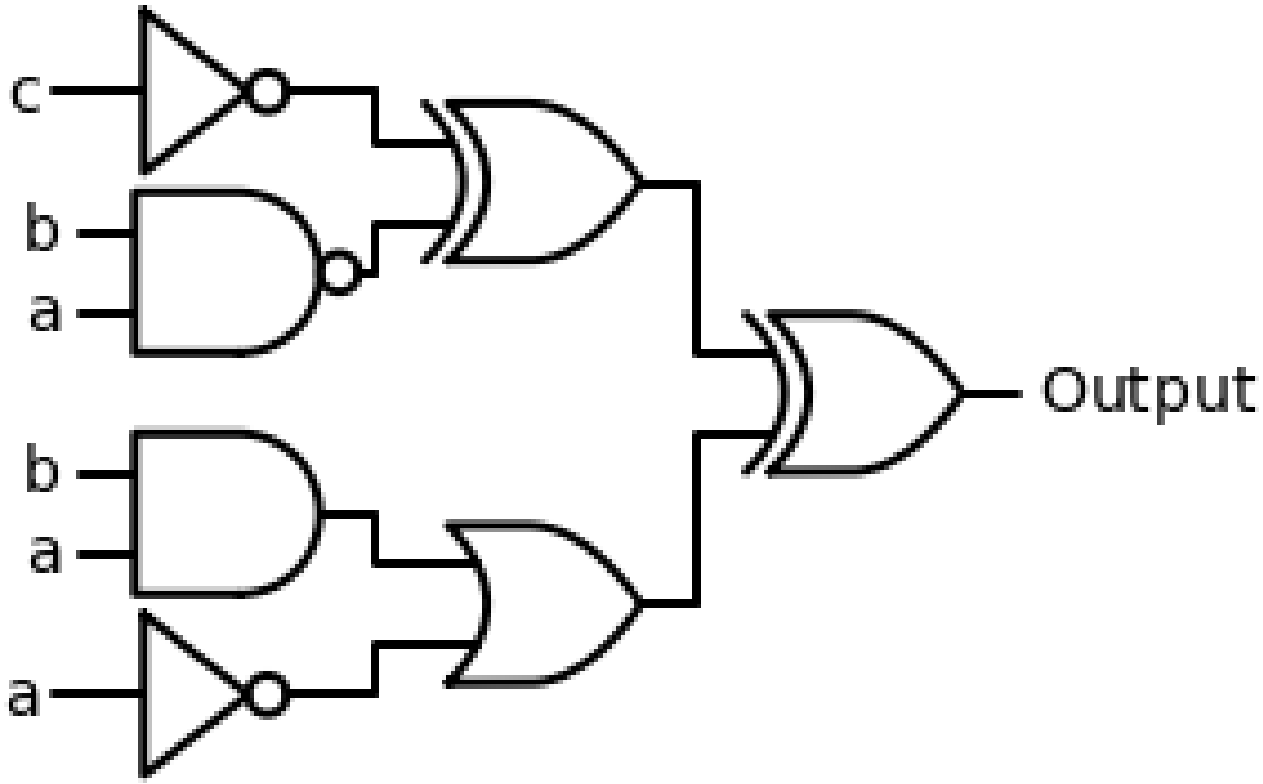
Question 24:

Are these two circuits equivalent?

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

Expression 2: (((not c) xor (b nand a)) xor ((b and a) or (not a)))





Options:

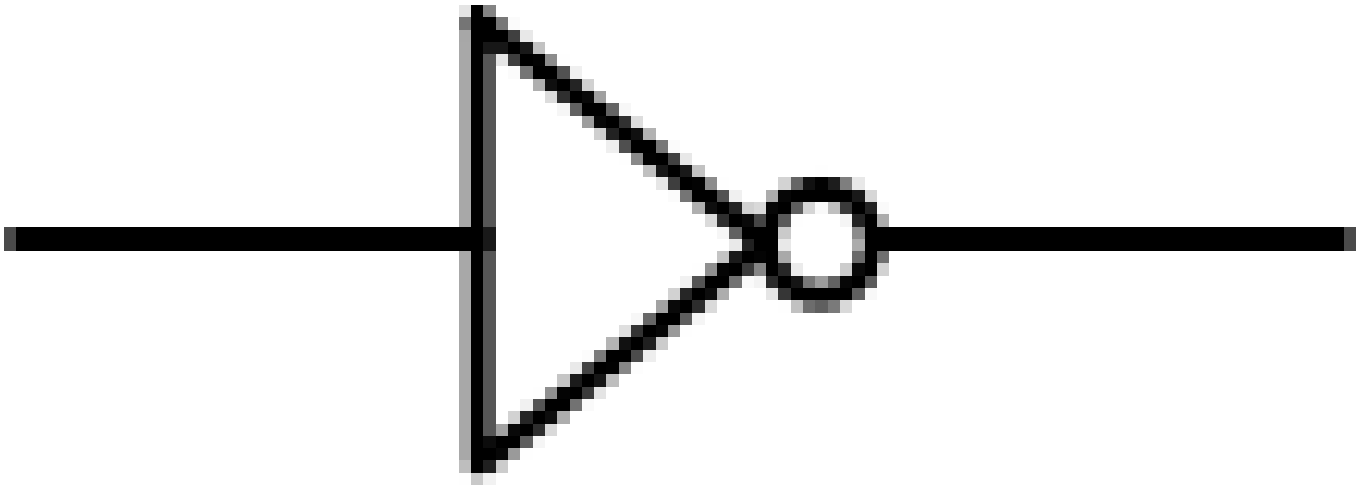
1. Yes

2. No

Correct Answer: yes

Question 25:

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



Options:

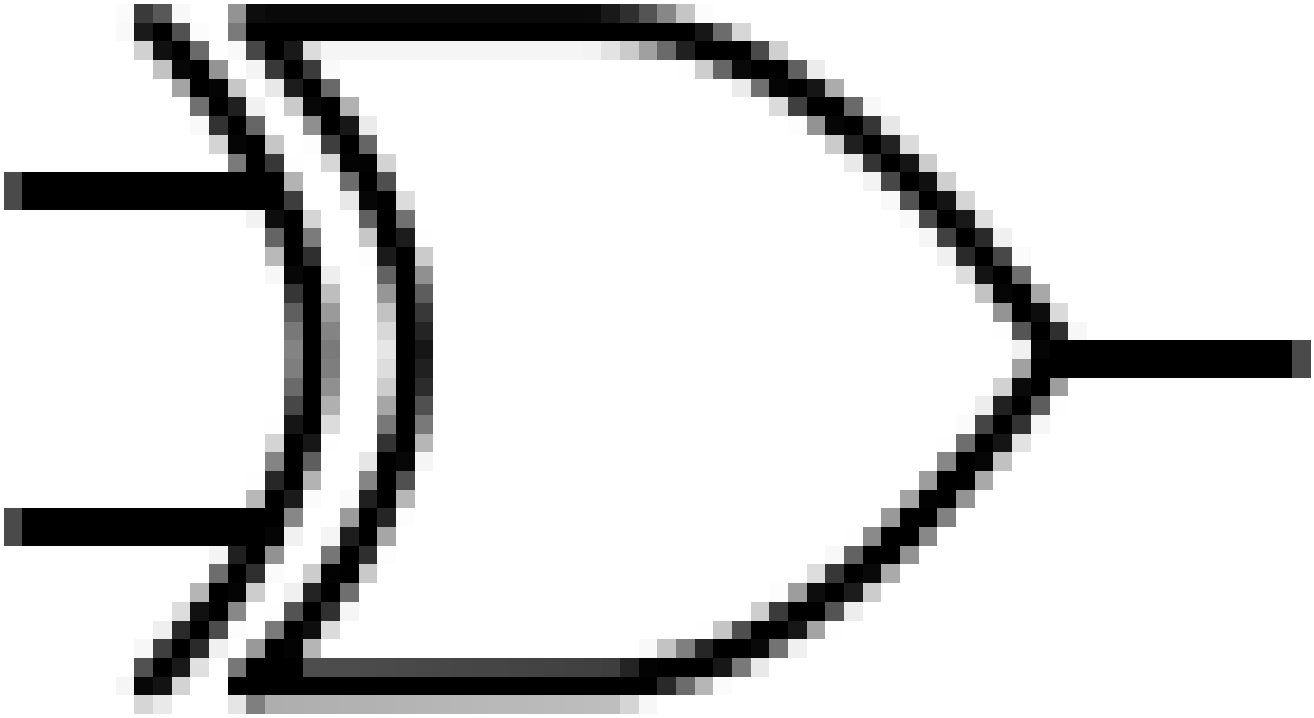
1. 0

2. 1

Correct Answer: 0

Question 26:

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



Options:

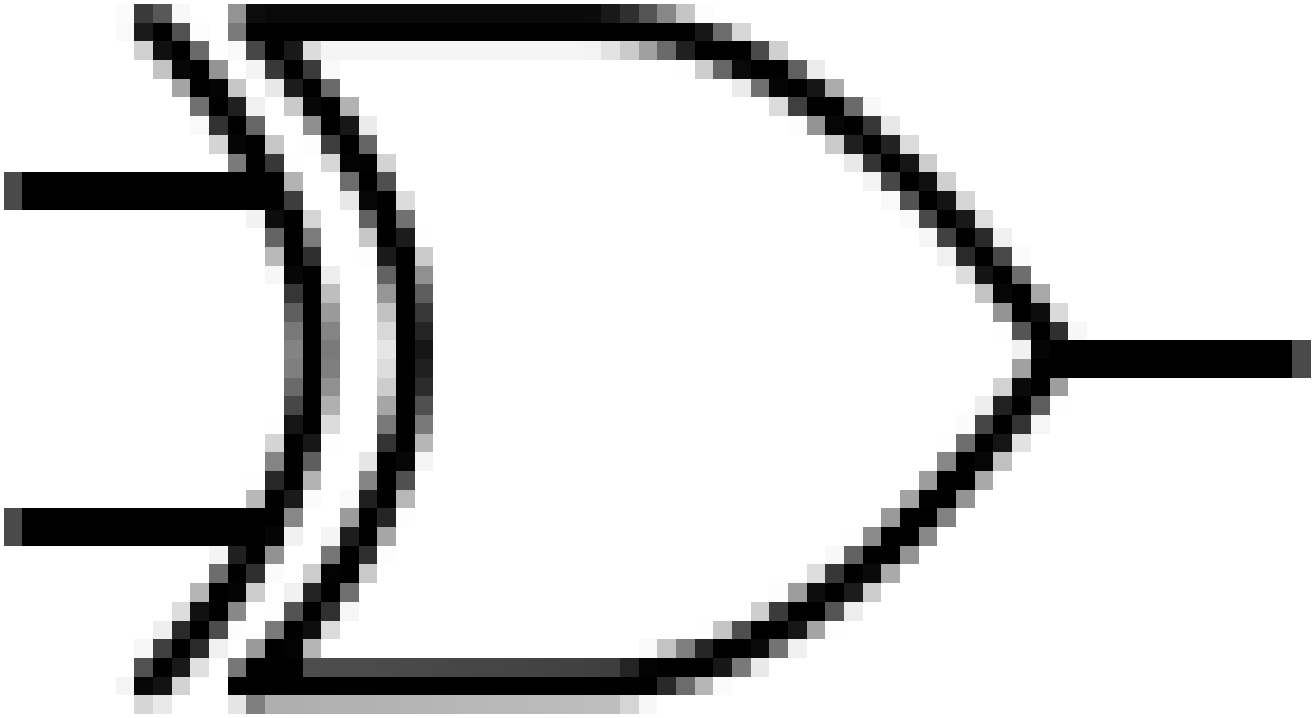
1. 1

2. 0

Correct Answer: 0

Question 27:

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



Options:

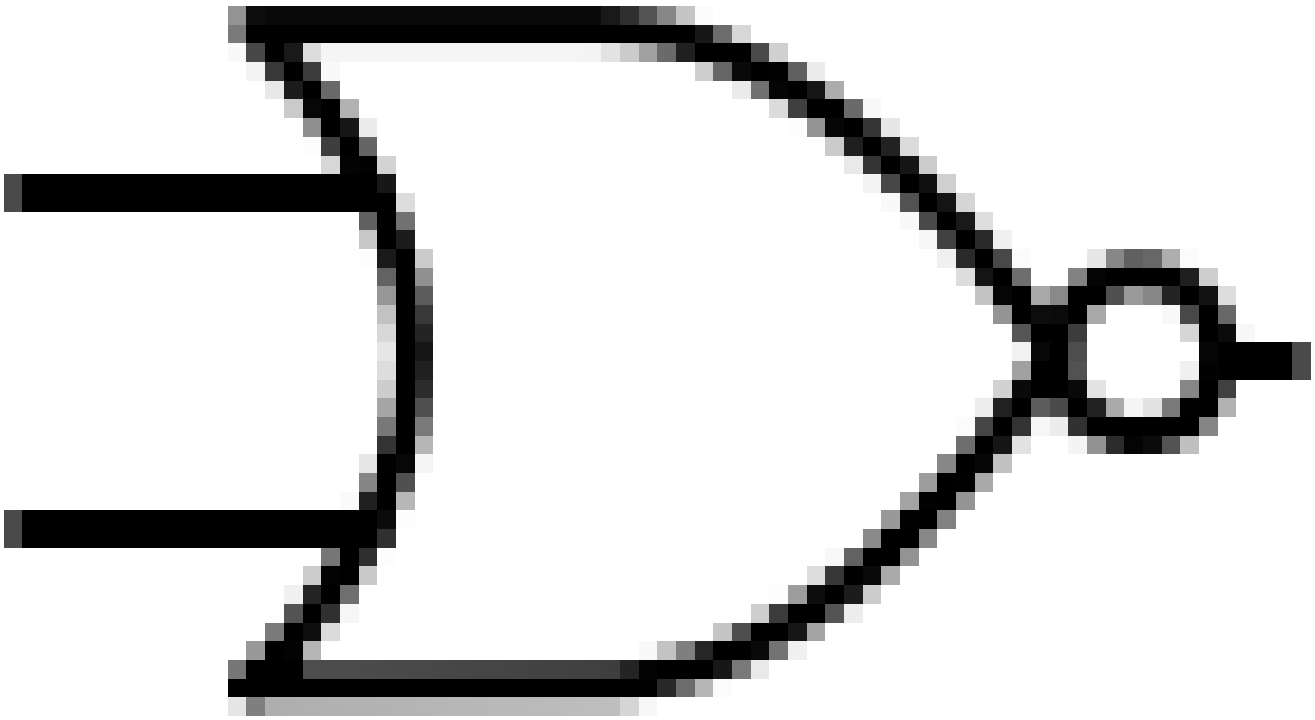
1. 1

2. 0

Correct Answer: 0

Question 28:

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



Options:

1. 0

2. 1

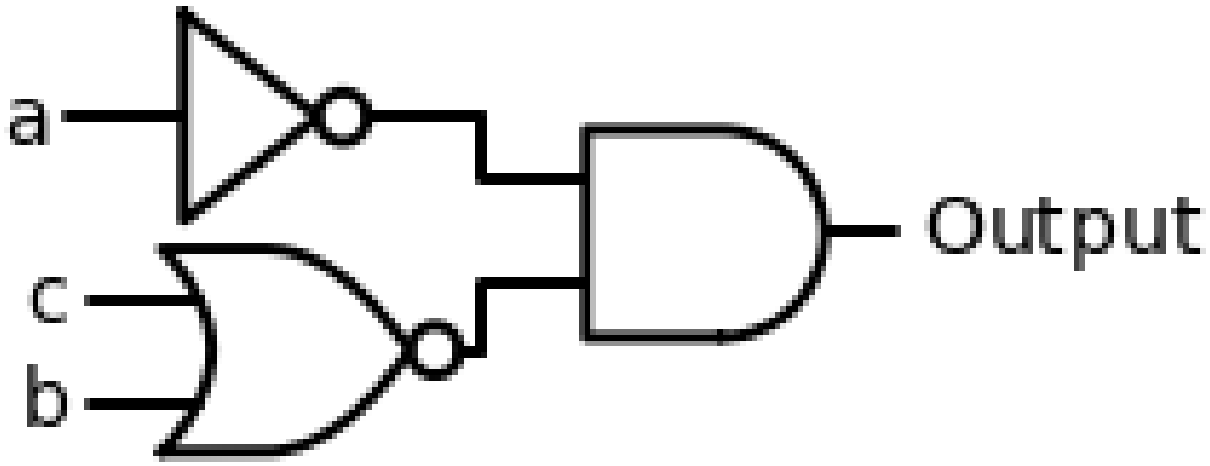
Correct Answer: 1

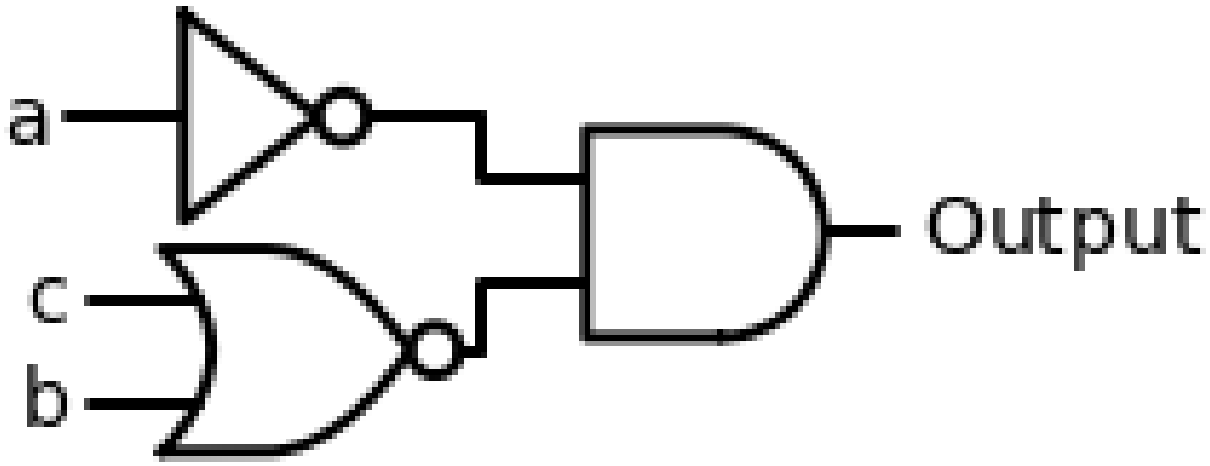
Question 29:

Are these two circuits equivalent?

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

Expression 2: ((not a) and (c nor b))





Options:

1. Yes

2. No

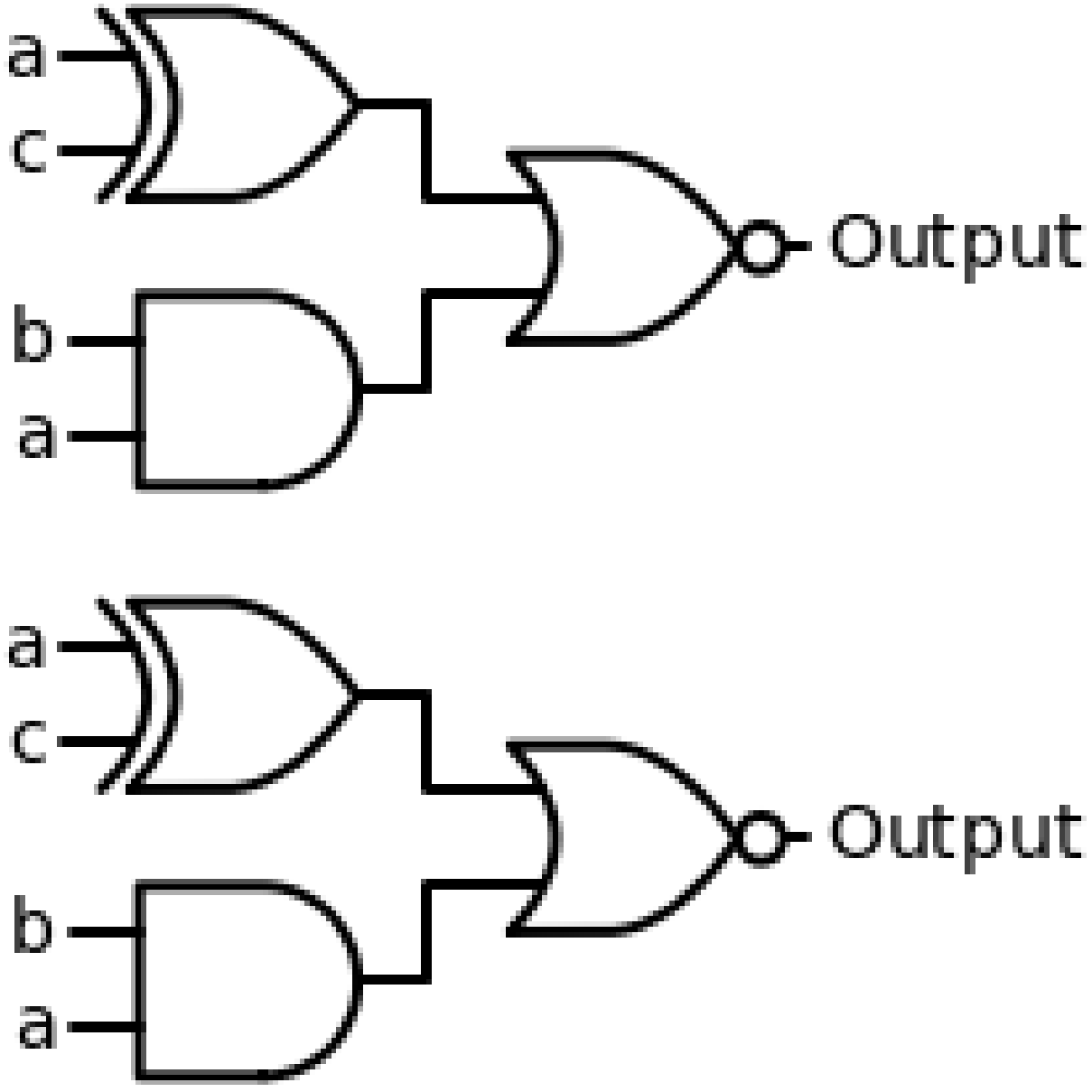
Correct Answer: yes

Question 30:

Are these two circuits equivalent?

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

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



Options:

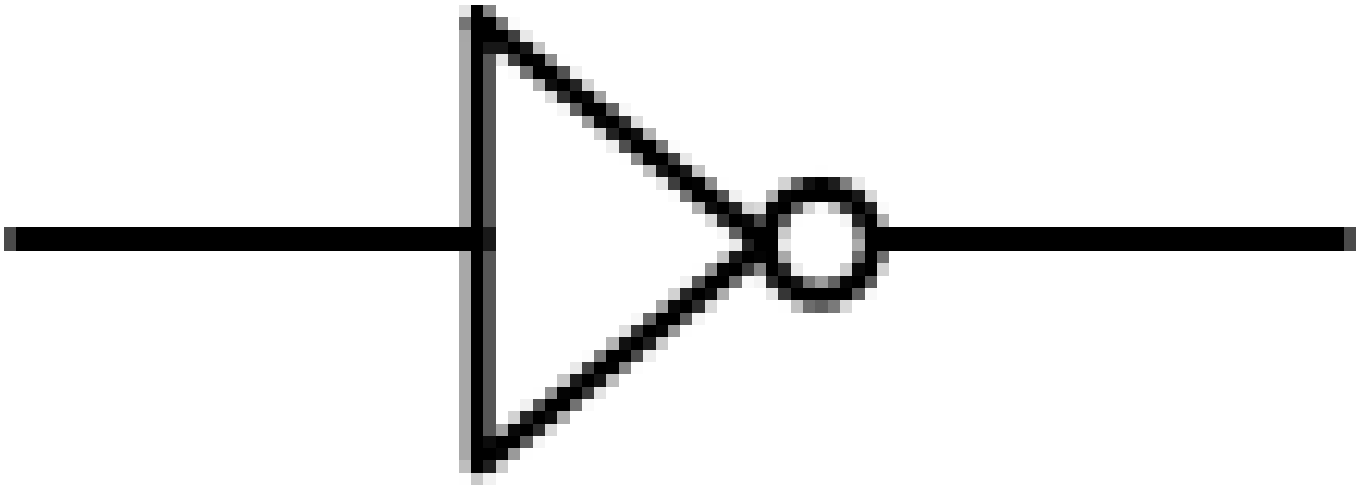
1. Yes

2. No

Correct Answer: yes

Question 31:

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



Options:

1. 1

2. 0

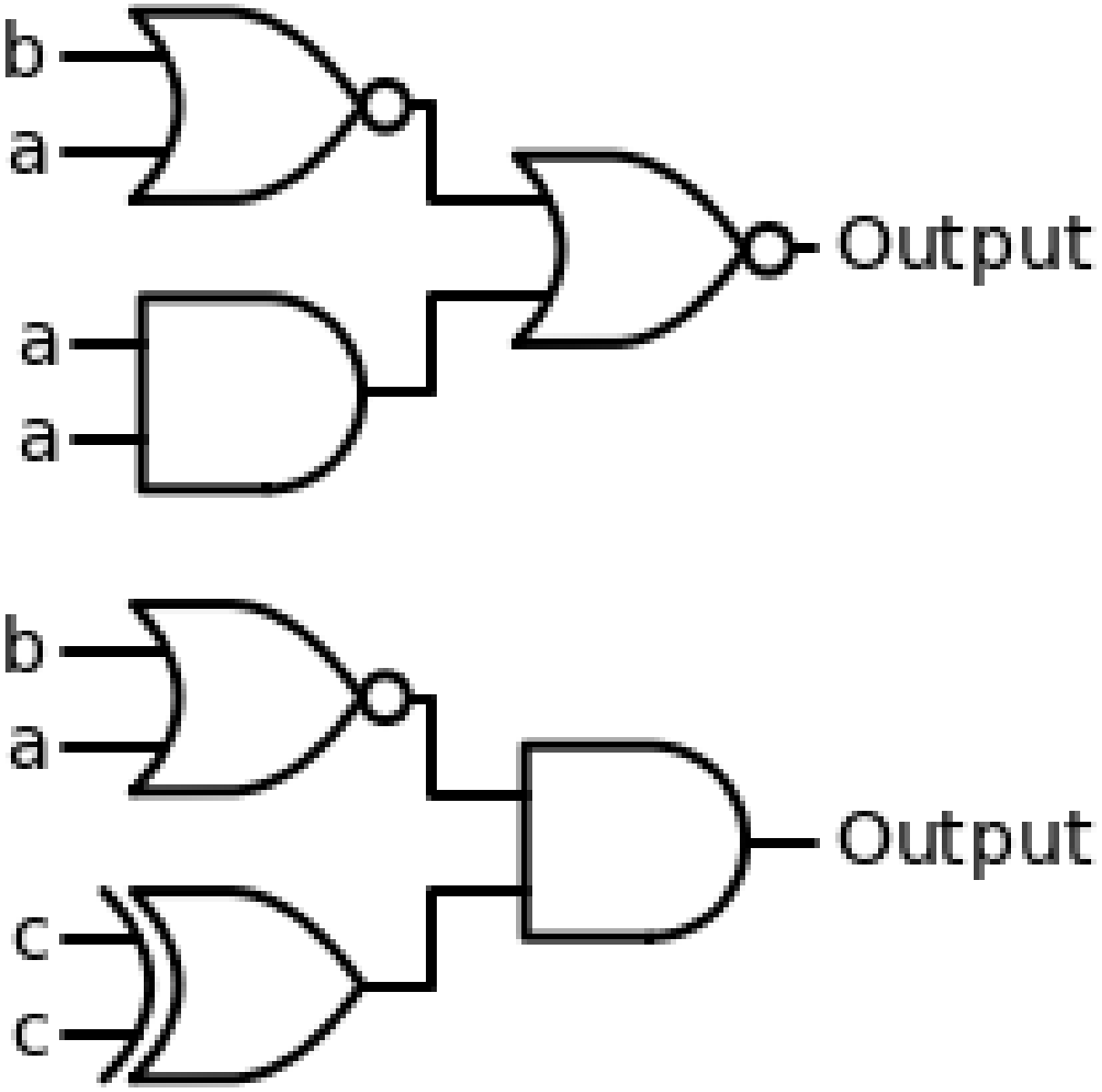
Correct Answer: 1

Question 32:

Are these two circuits equivalent?

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

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



Options:

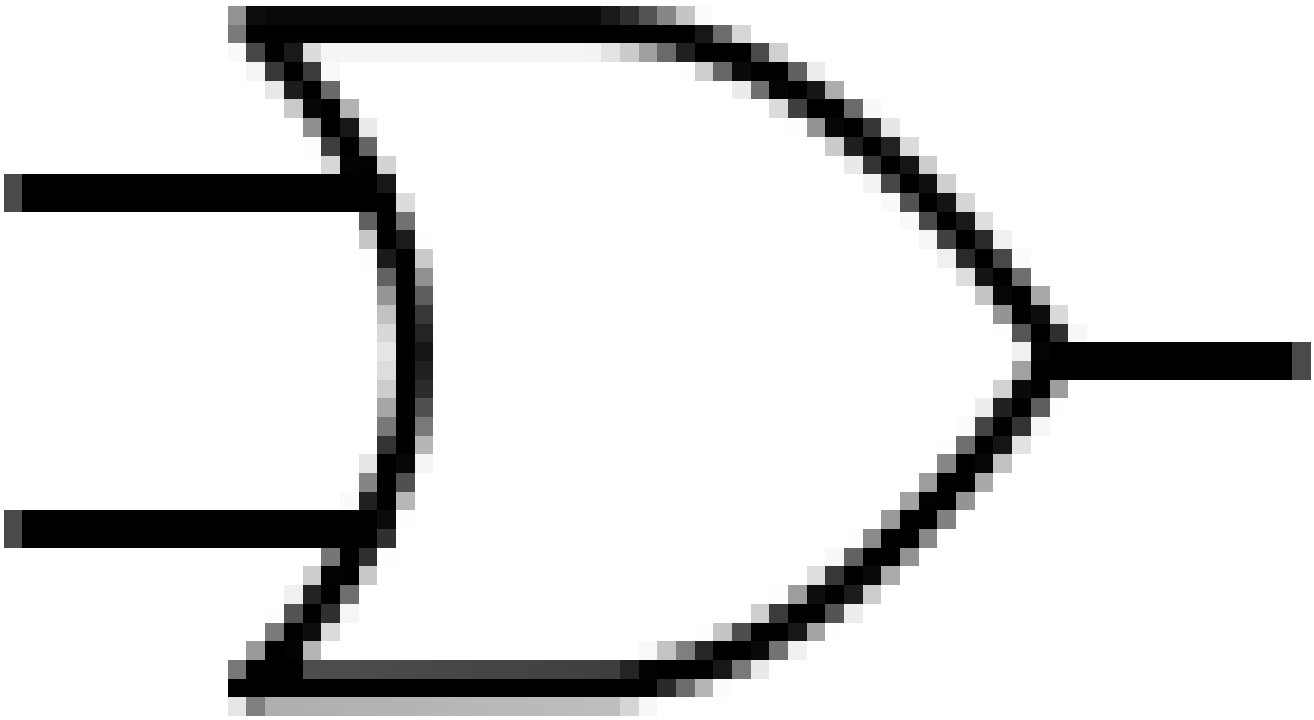
1. Yes

2. No

Correct Answer: no

Question 33:

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



Options:

1. 1

2. 0

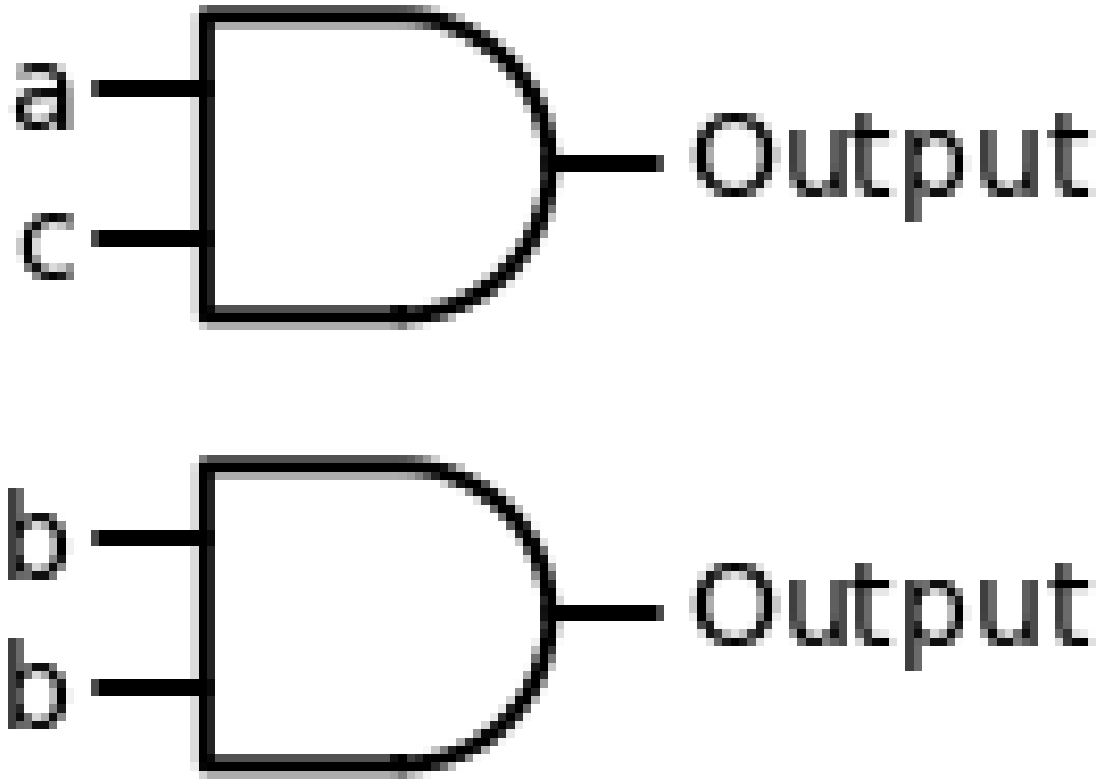
Correct Answer: 1

Question 34:

Are these two circuits equivalent?

Expression 1: (a and c)

Expression 2: (b and b)



Options:

1. Yes

2. No

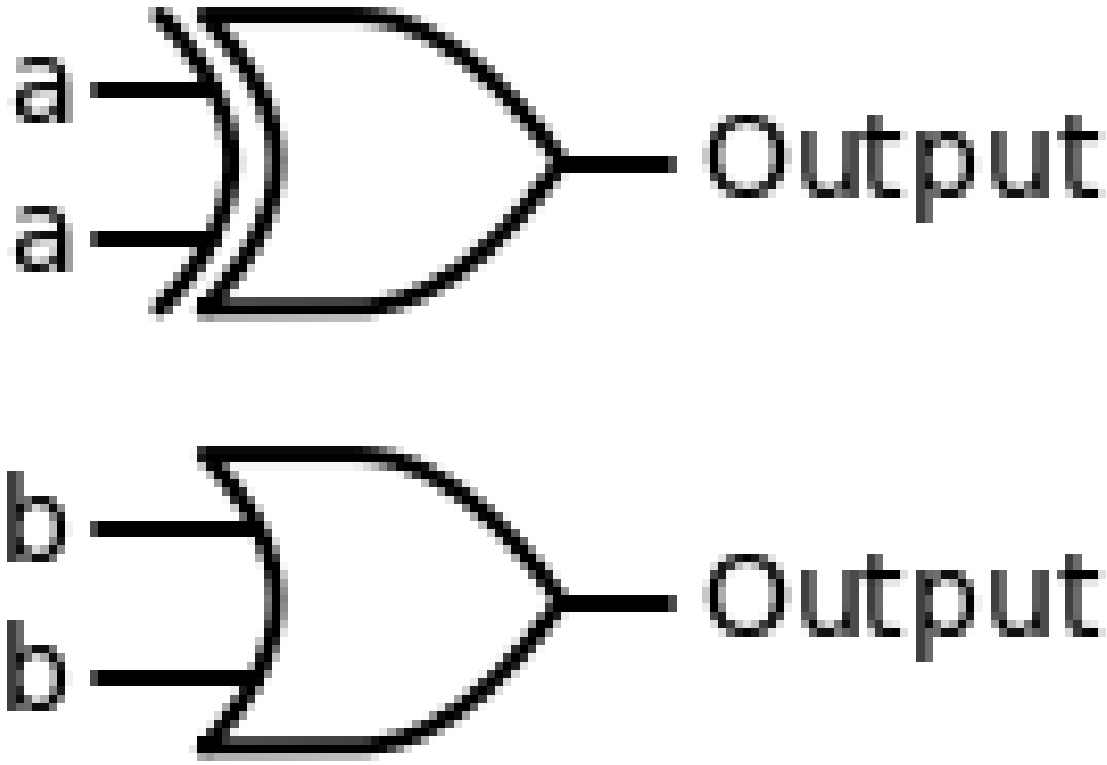
Correct Answer: no

Question 35:

Are these two circuits equivalent?

Expression 1: (a xor a)

Expression 2: (b or b)



Options:

1. Yes

2. No

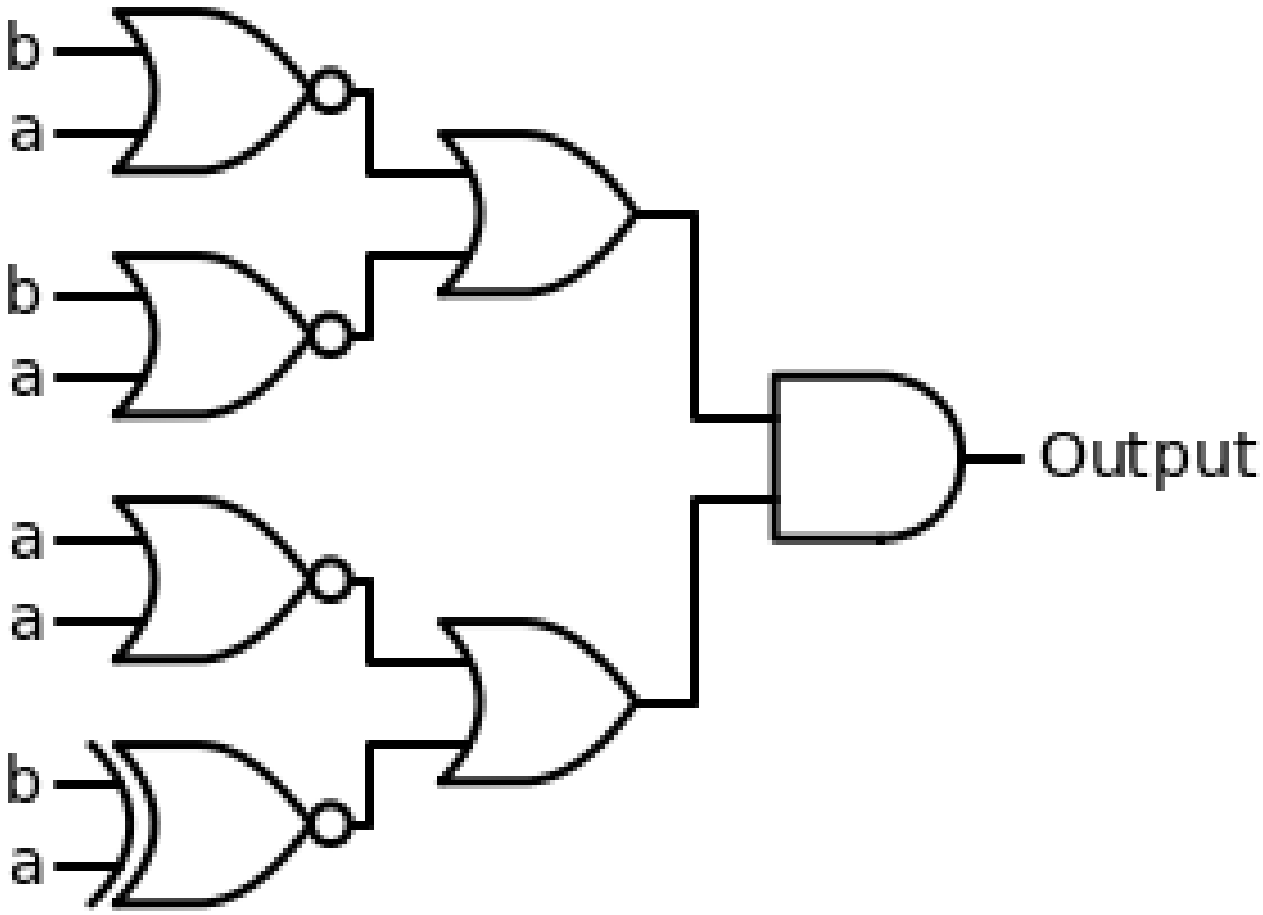
Correct Answer: no

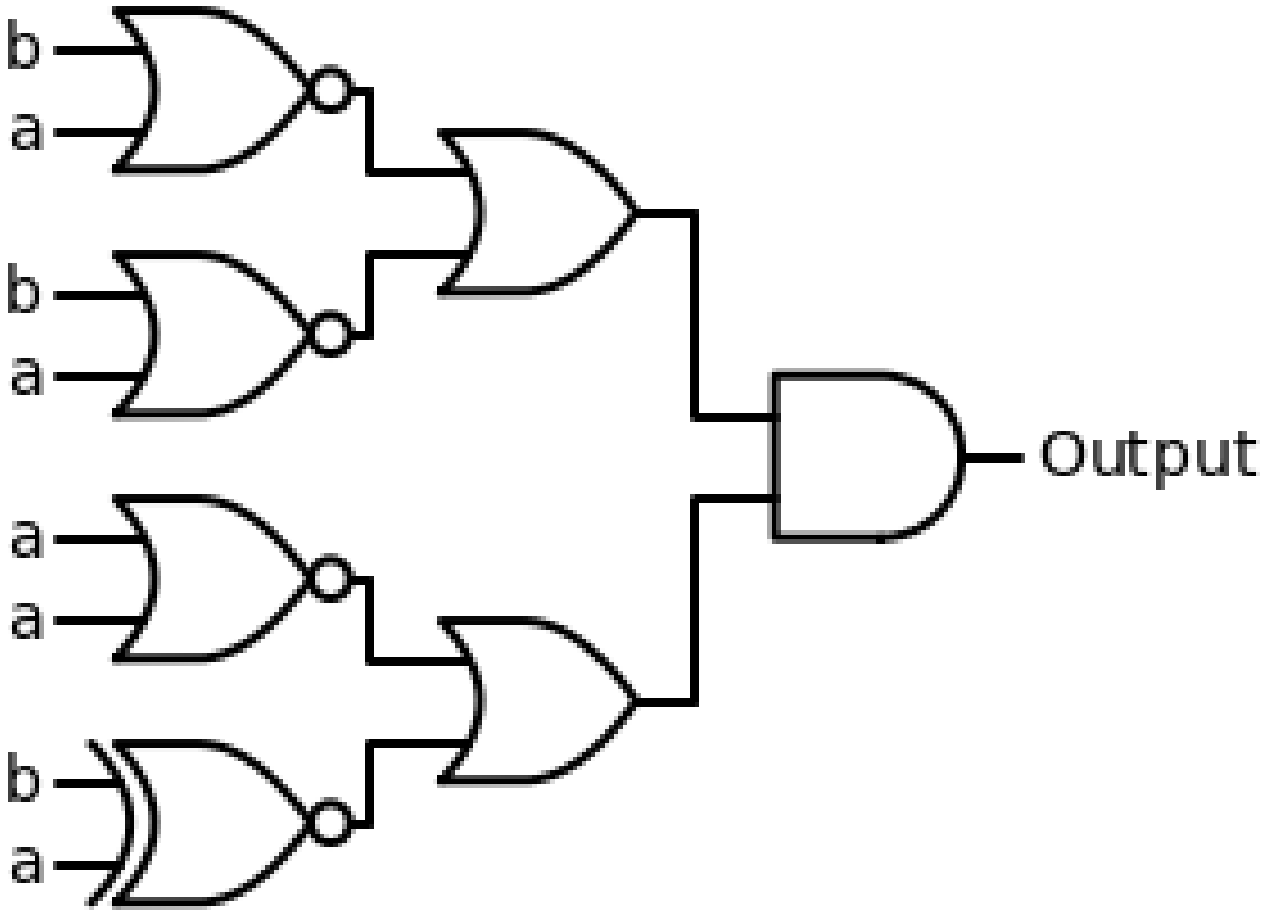
Question 36:

Are these two circuits equivalent?

Expression 1: (((b nor a) or (b nor a)) and ((a nor a) or (b xnor a)))

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





Options:

1. Yes

2. No

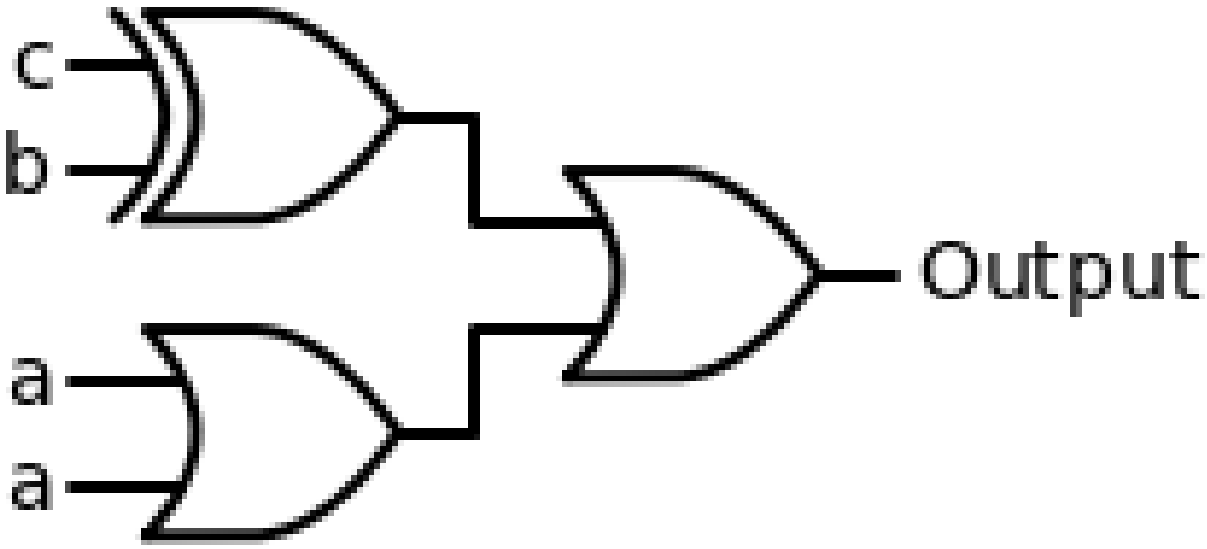
Correct Answer: yes

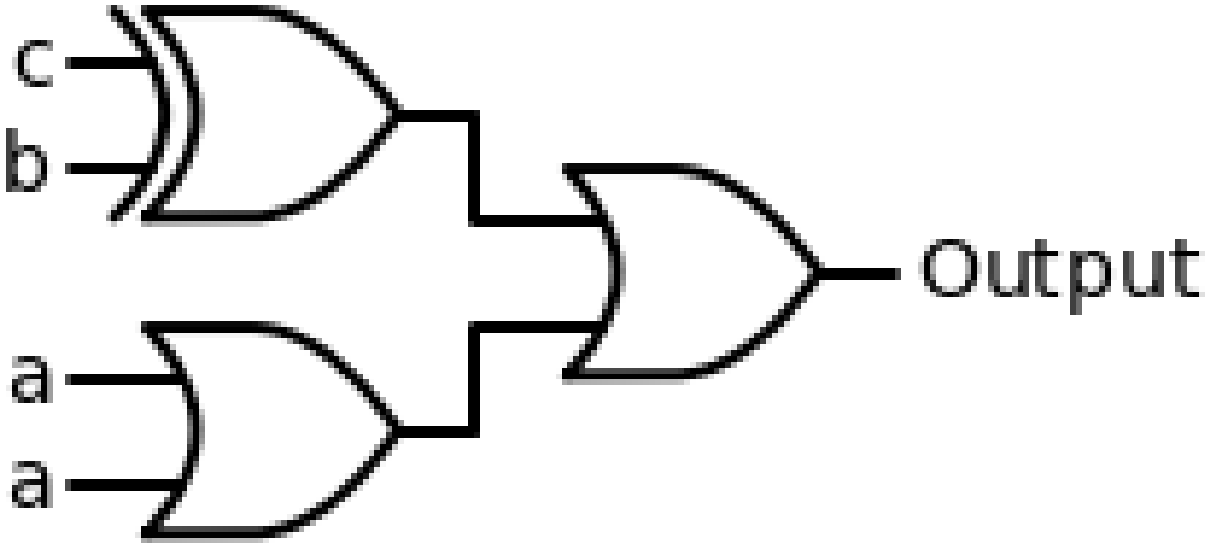
Question 37:

Are these two circuits equivalent?

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

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





Options:

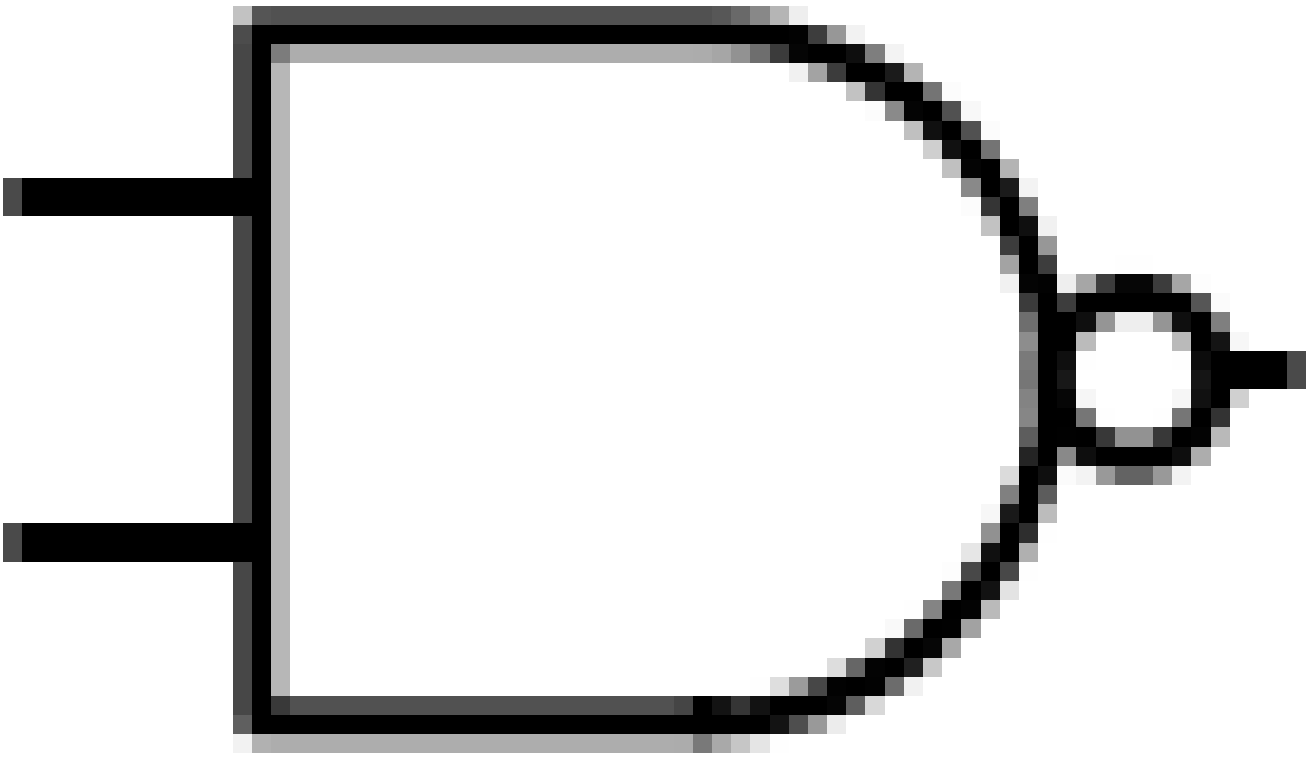
1. Yes

2. No

Correct Answer: yes

Question 38:

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



Options:

1. 0

2. 1

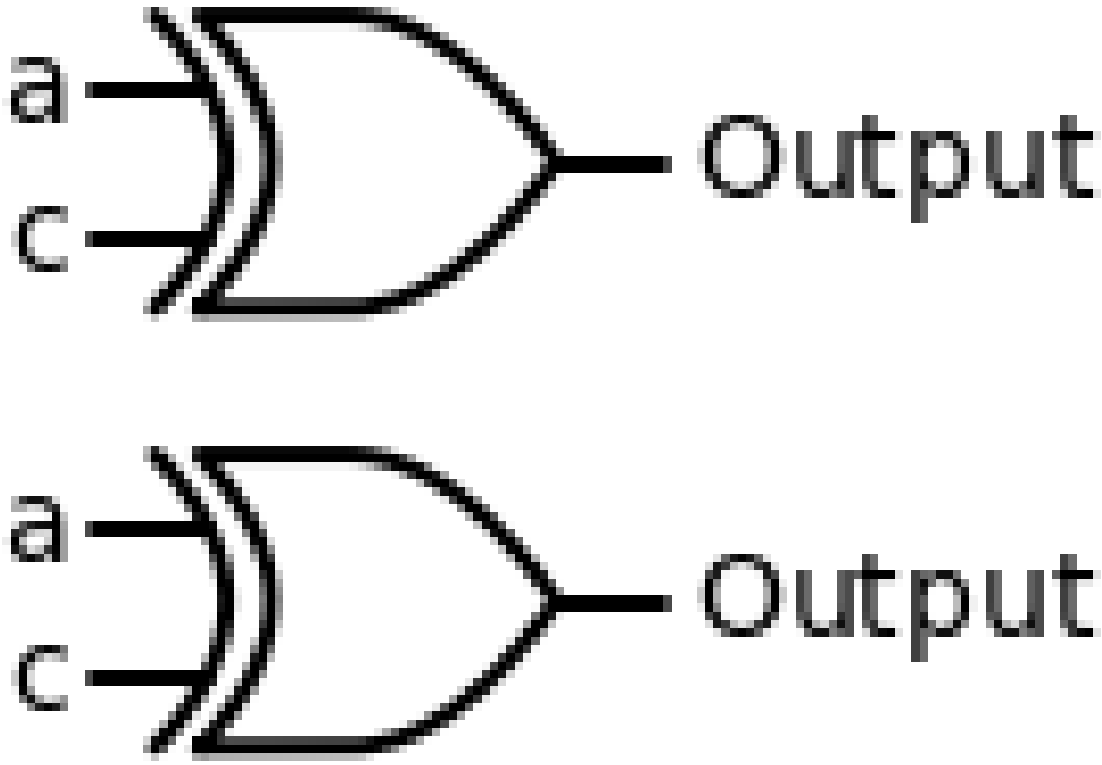
Correct Answer: 1

Question 39:

Are these two circuits equivalent?

Expression 1: (a xor c)

Expression 2: (a xor c)



Options:

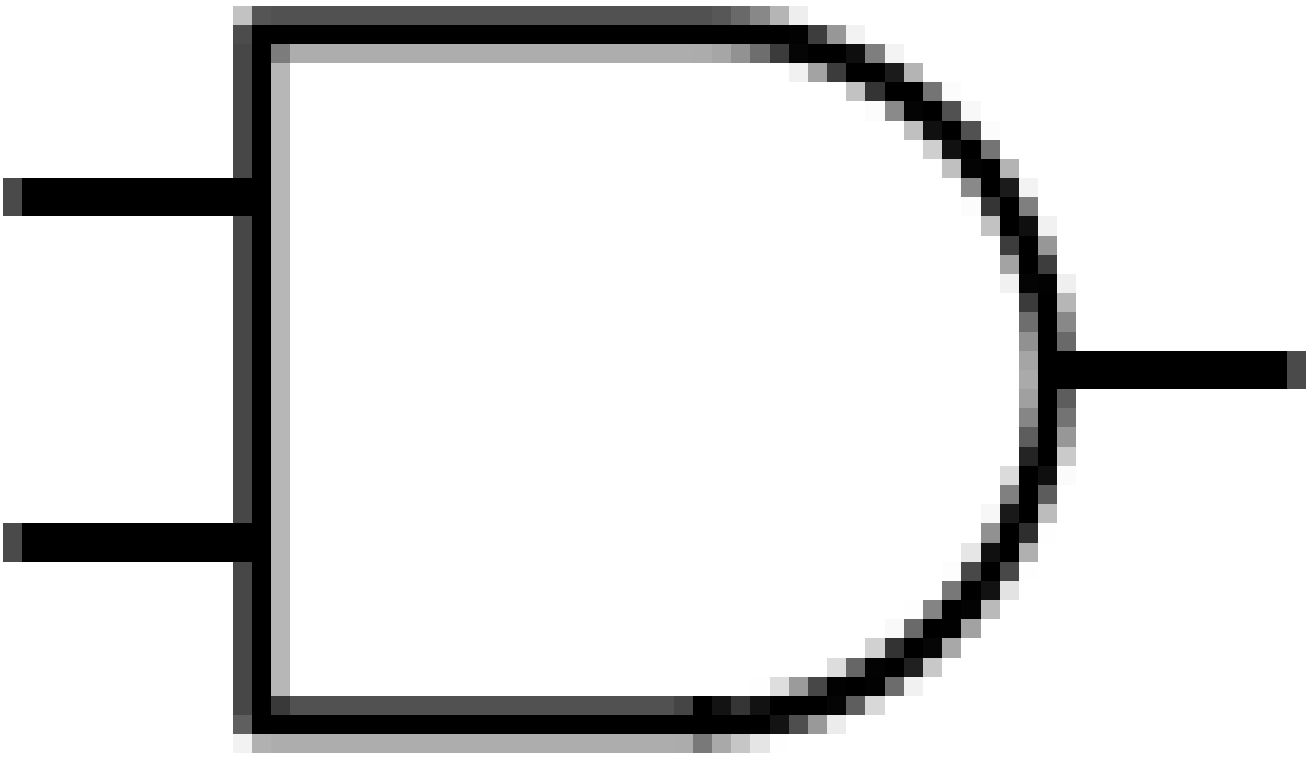
1. Yes

2. No

Correct Answer: yes

Question 40:

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



Options:

1. 0

2. 1

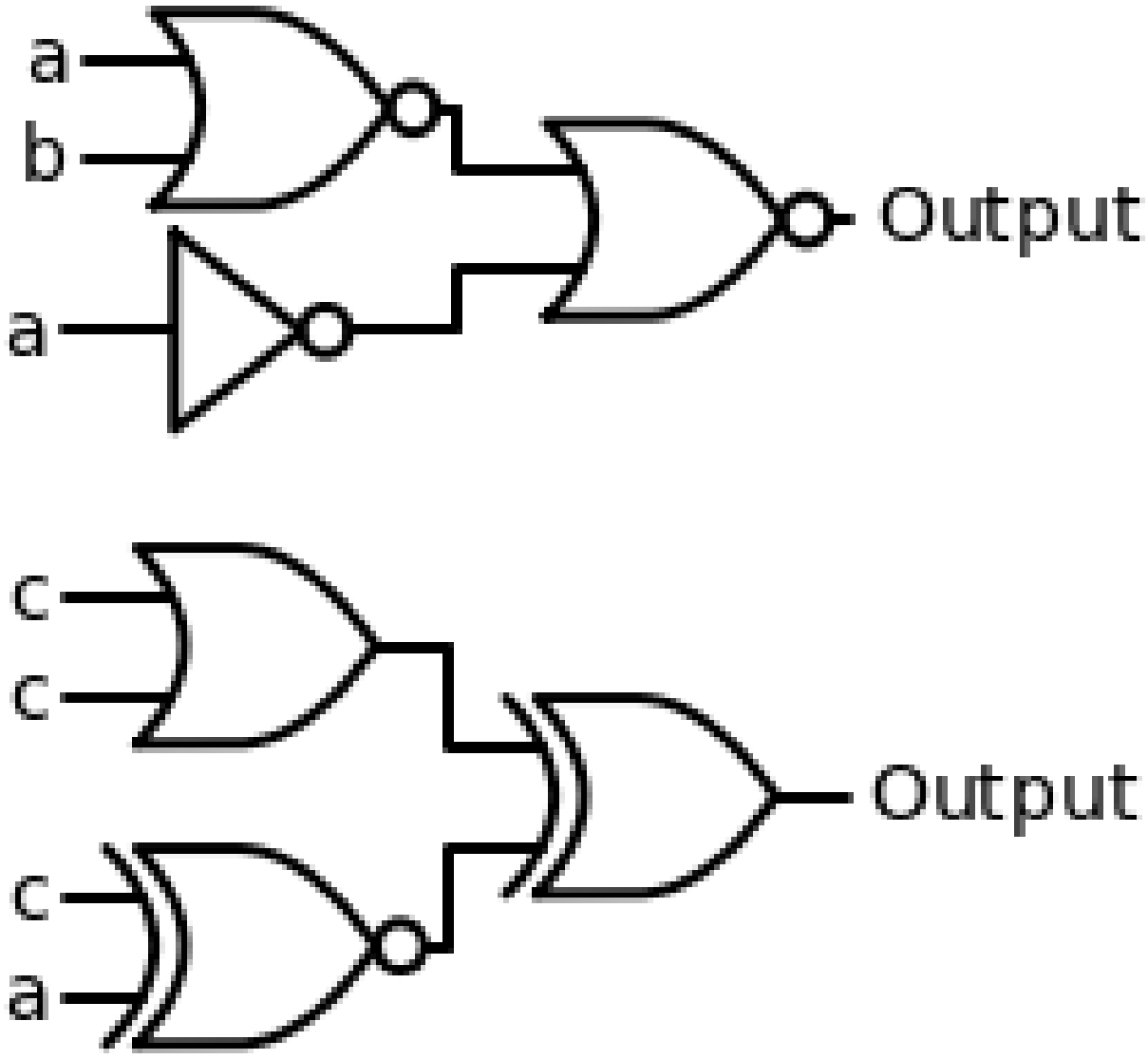
Correct Answer: 0

Question 41:

Are these two circuits equivalent?

Expression 1: ((a nor b) nor (not a))

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



Options:

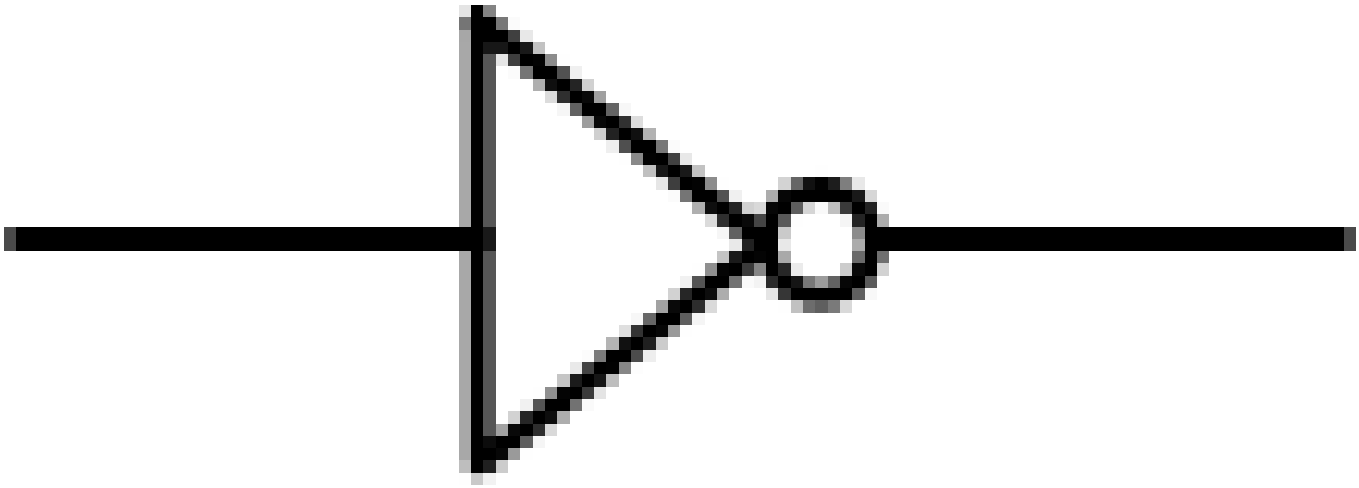
1. Yes

2. No

Correct Answer: no

Question 42:

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



Options:

1. 1

2. 0

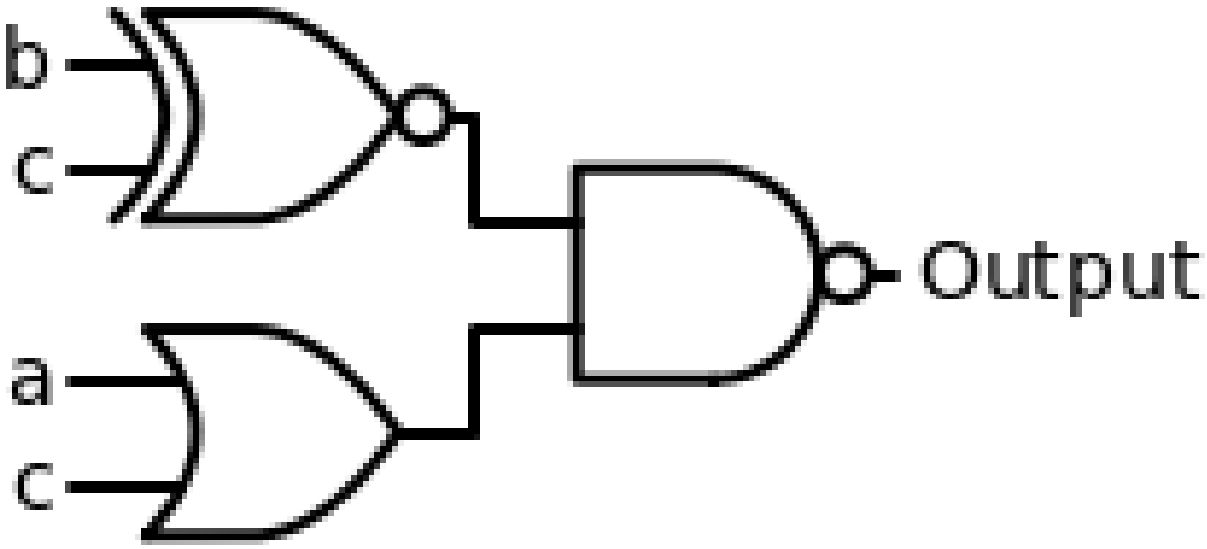
Correct Answer: 0

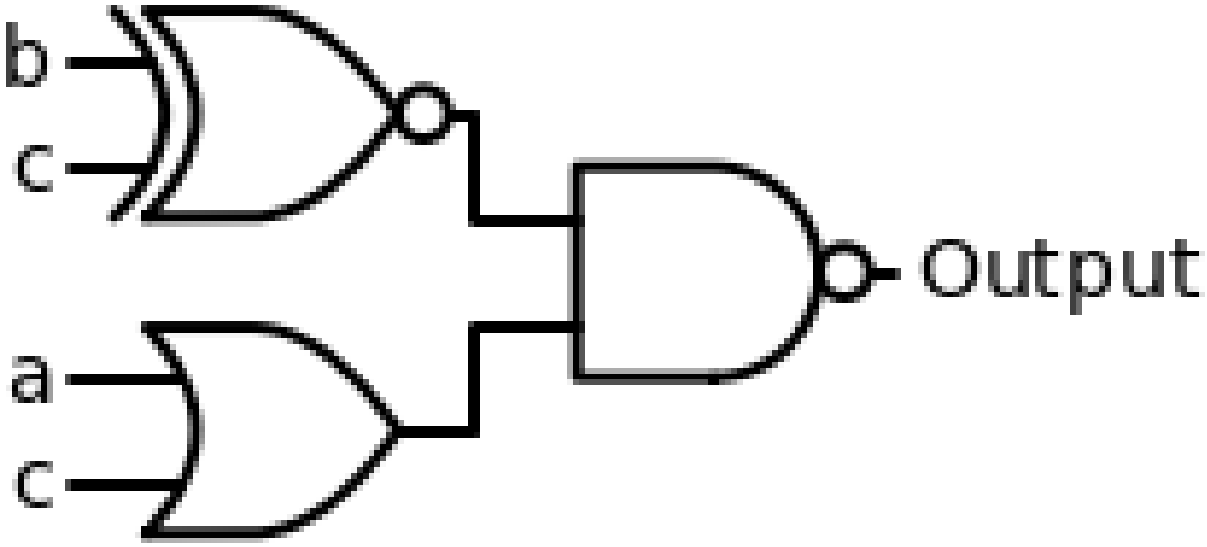
Question 43:

Are these two circuits equivalent?

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

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





Options:

1. Yes

2. No

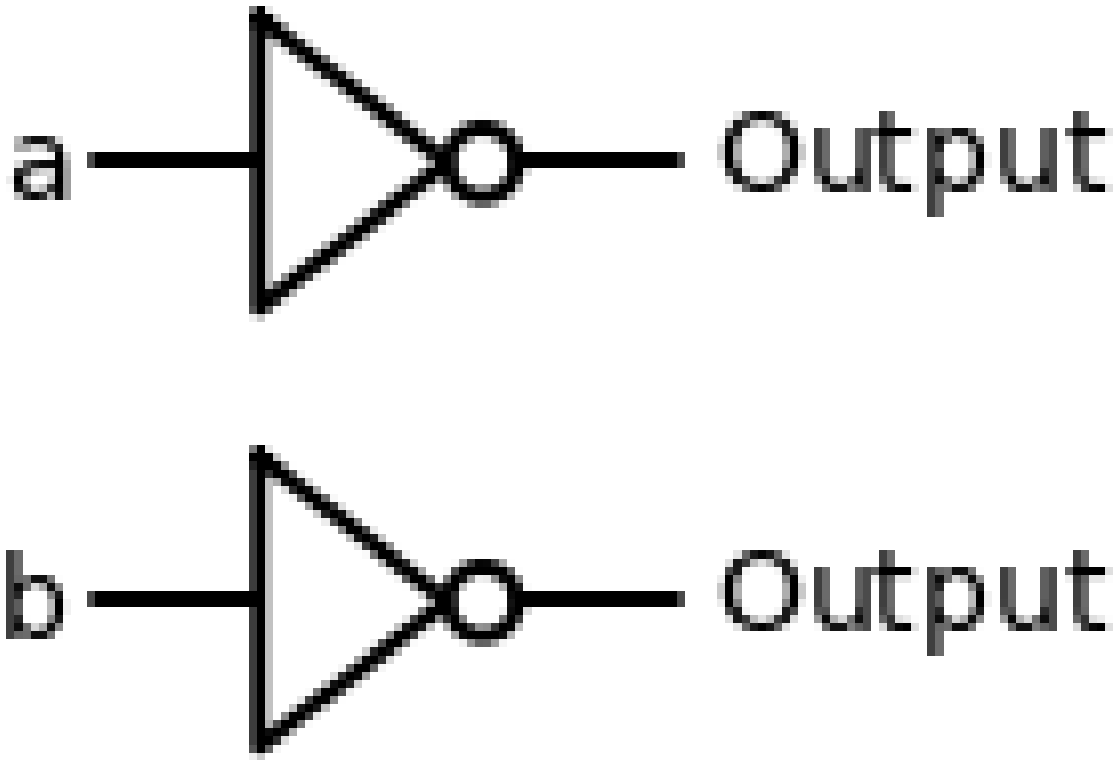
Correct Answer: yes

Question 44:

Are these two circuits equivalent?

Expression 1: (not a)

Expression 2: (not b)



Options:

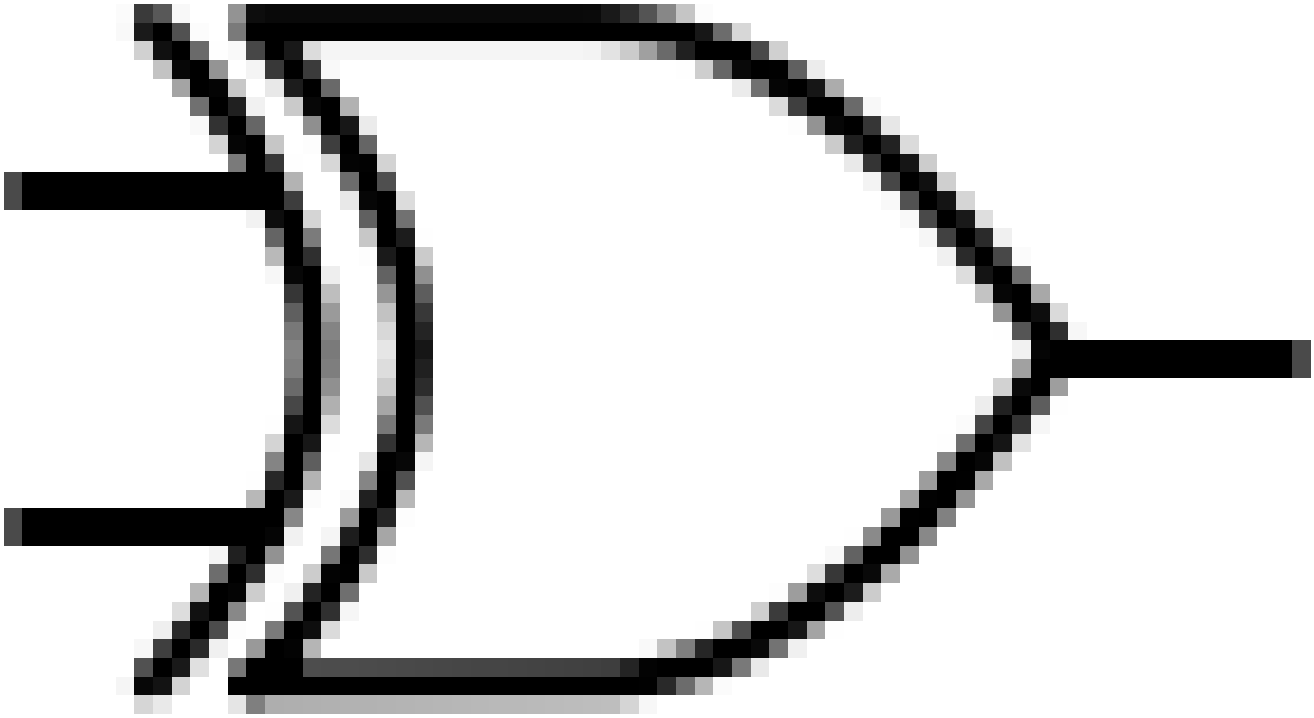
1. Yes

2. No

Correct Answer: no

Question 45:

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



Options:

1. 1

2. 0

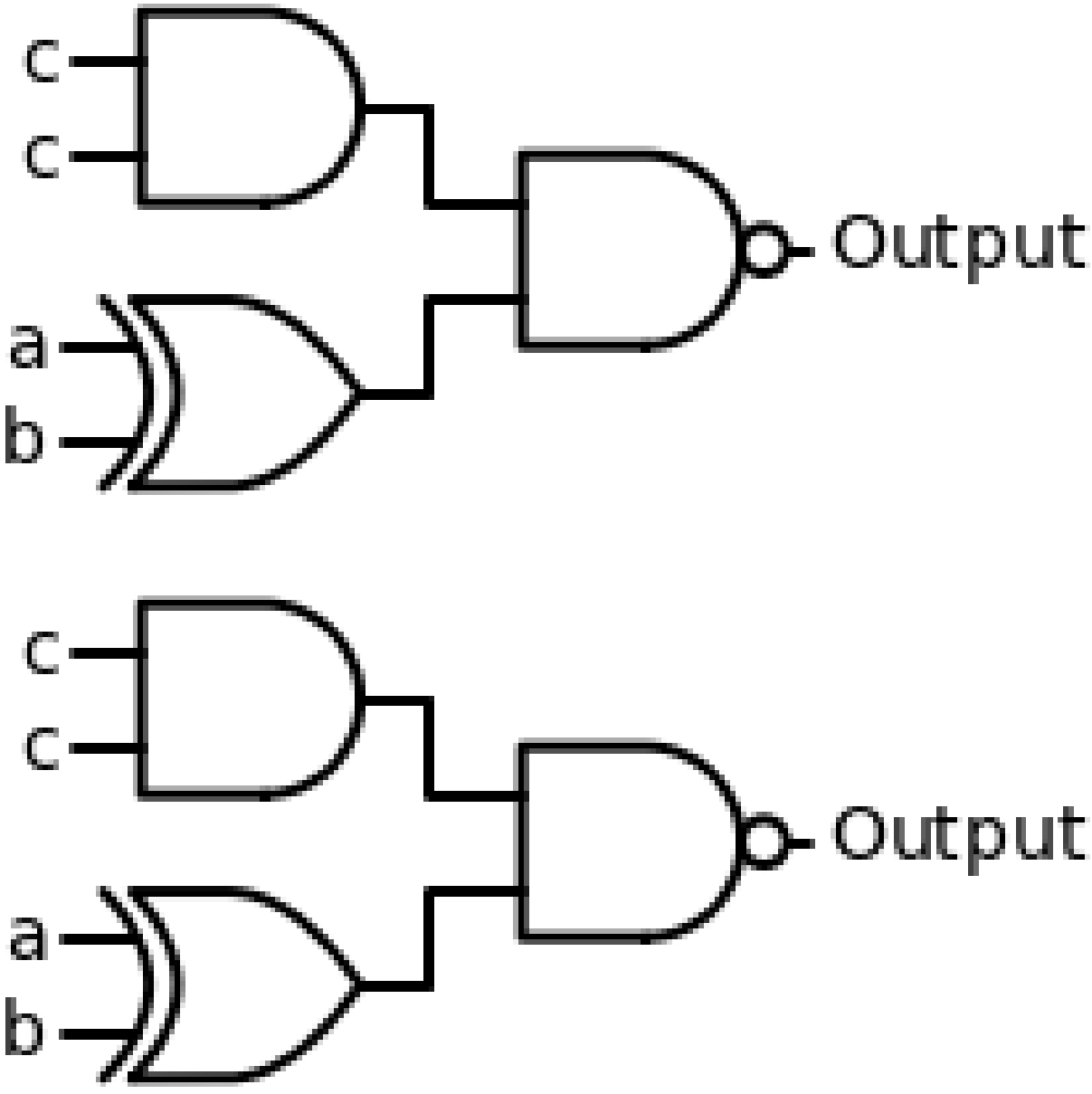
Correct Answer: 0

Question 46:

Are these two circuits equivalent?

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

Expression 2: (not ((c and c) and (a xor b)))



Options:

1. Yes

2. No

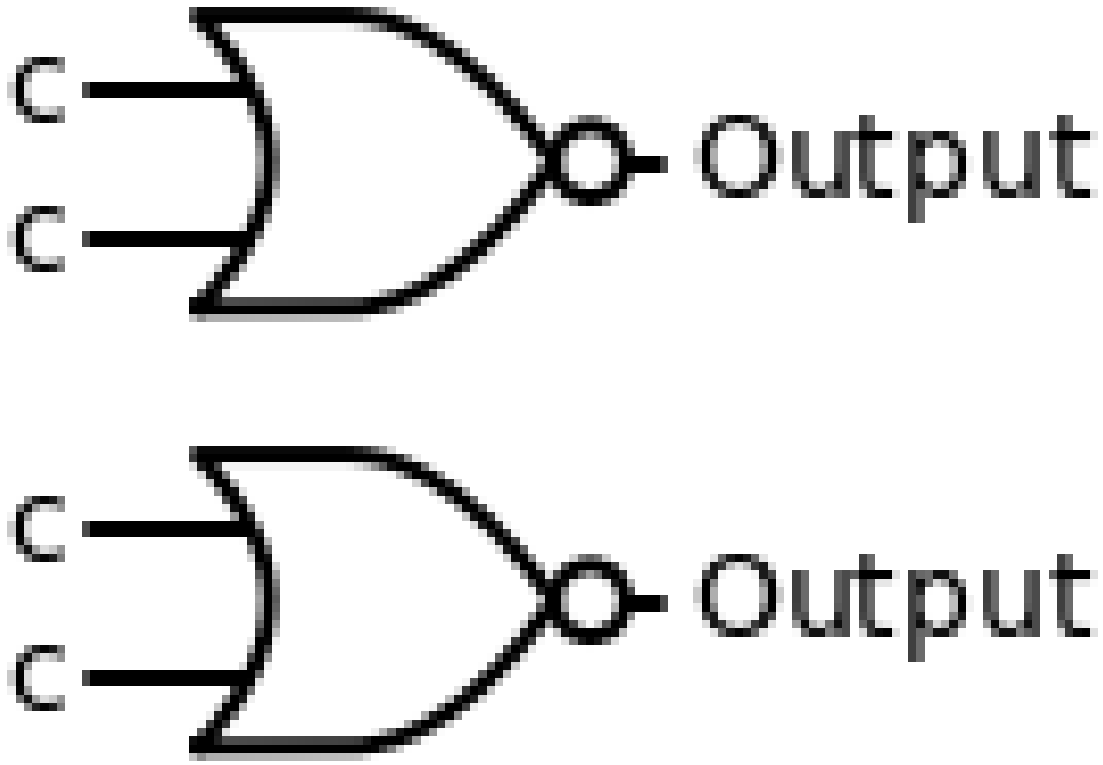
Correct Answer: yes

Question 47:

Are these two circuits equivalent?

Expression 1: (c nor c)

Expression 2: (c nor c)



Options:

1. Yes

2. No

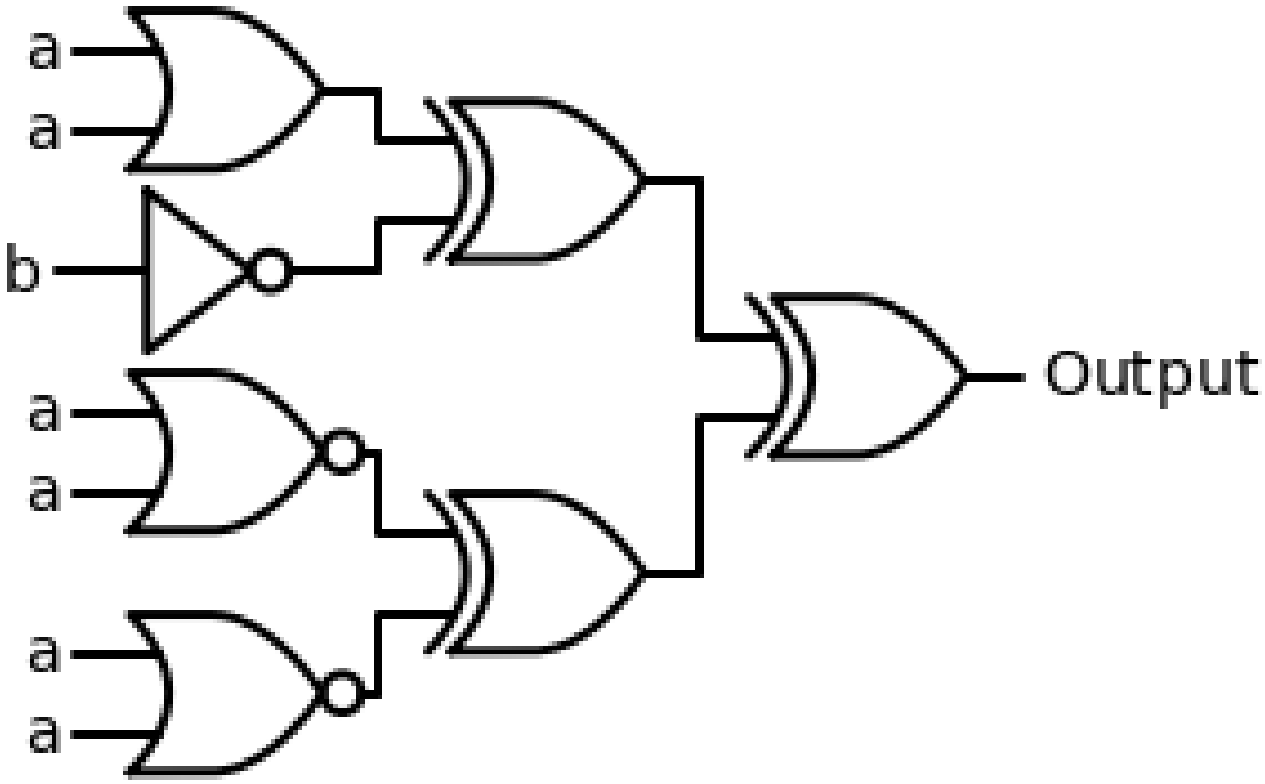
Correct Answer: yes

Question 48:

Are these two circuits equivalent?

Expression 1: (((a or a) xor (not b)) xor ((a nor a) xor (a nor a)))

Expression 2: (not (b and a))



Options:

1. Yes

2. No

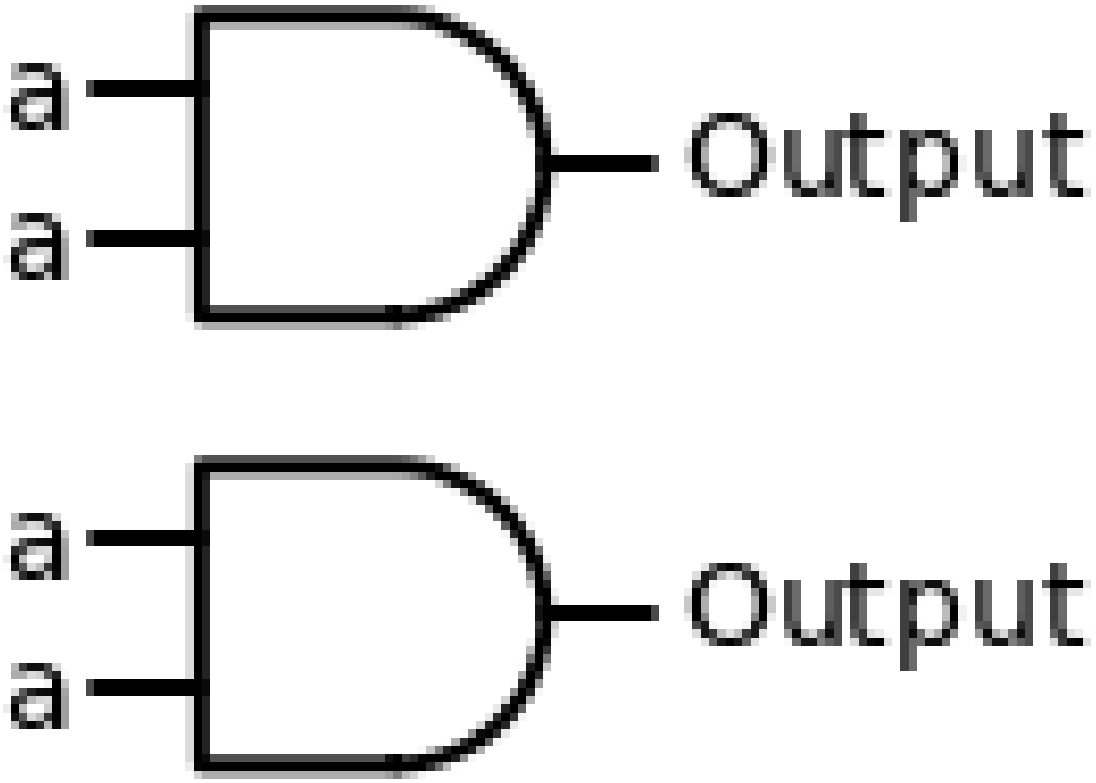
Correct Answer: no

Question 49:

Are these two circuits equivalent?

Expression 1: (a and a)

Expression 2: (a and a)



Options:

1. Yes

2. No

Correct Answer: yes