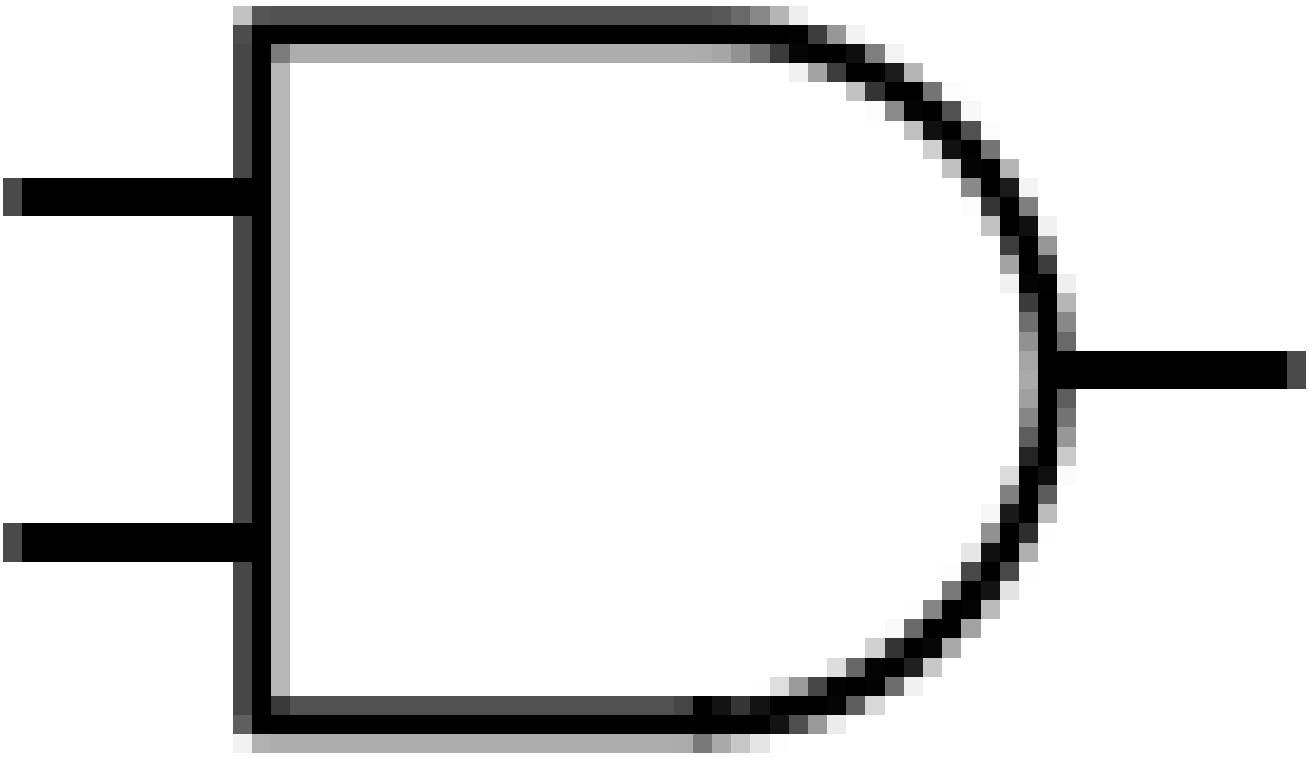
Question 1:

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



Options:

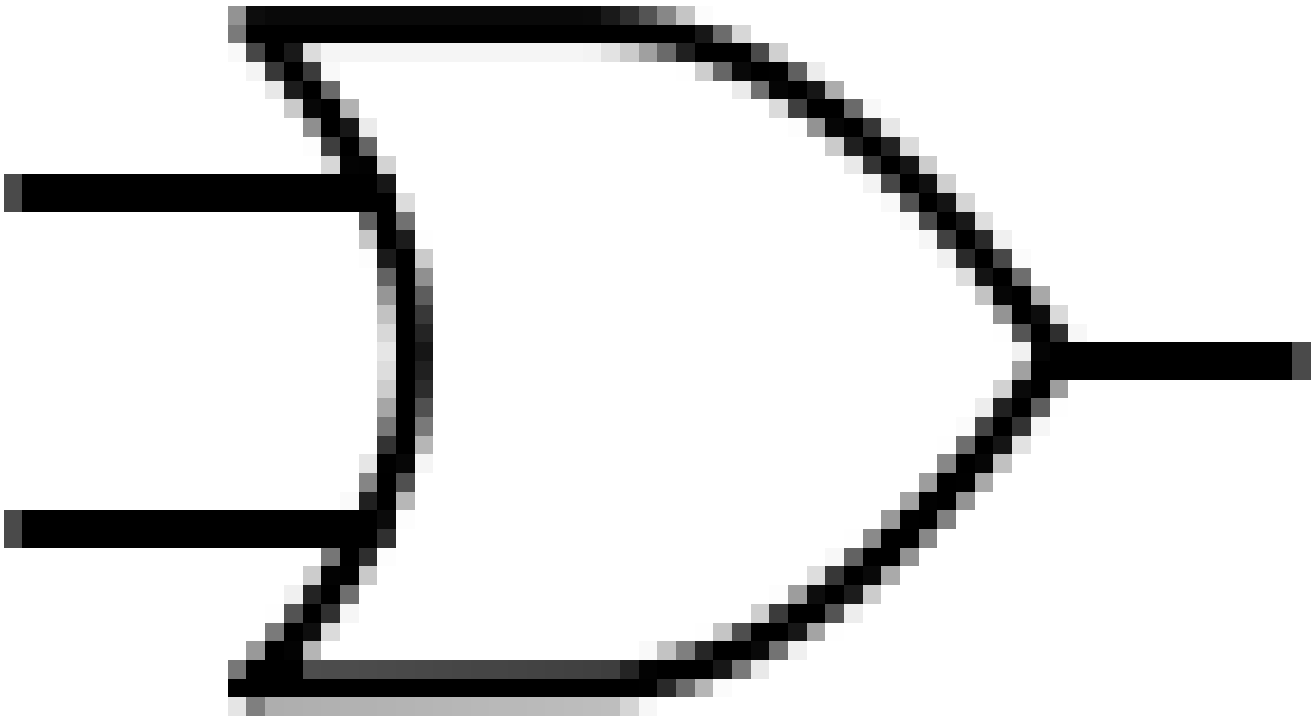
1. 0

2. 1

Correct Answer: 1

Question 2:

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



Options:

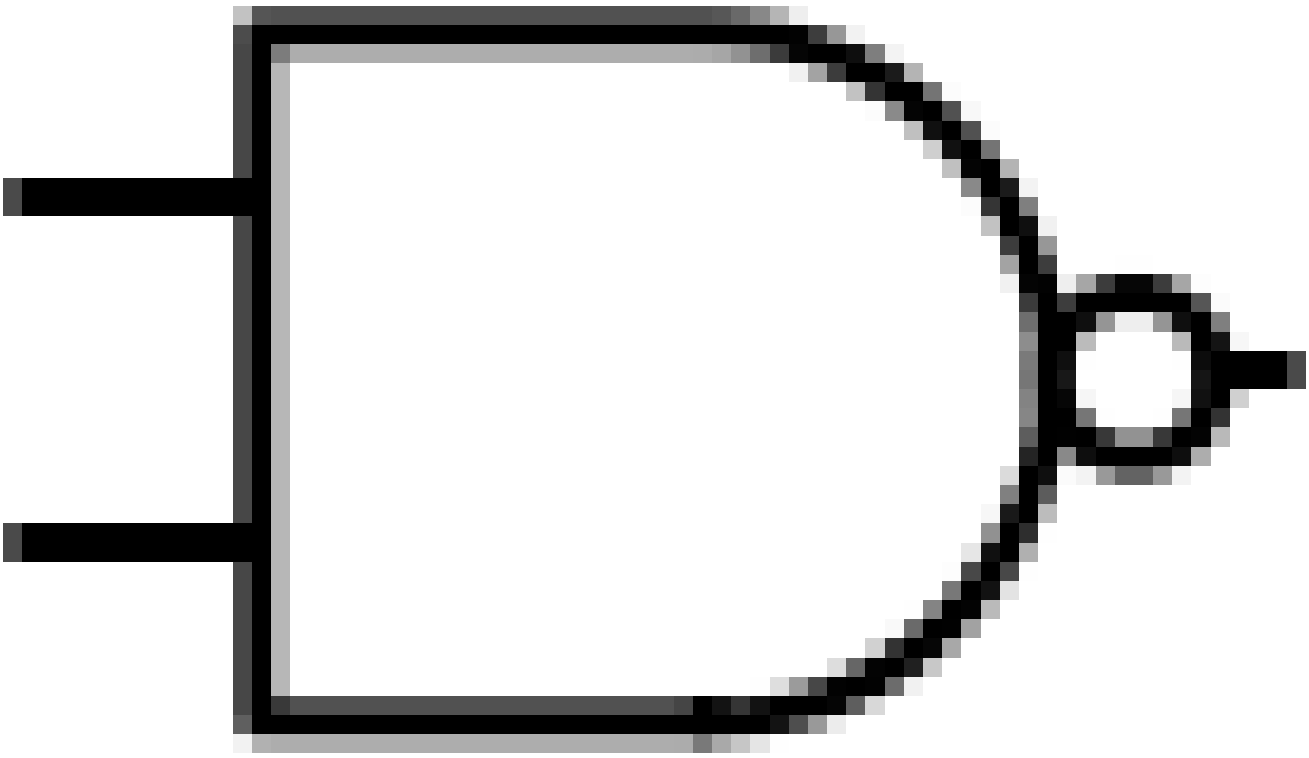
1. 1

2. 0

Correct Answer: 1

Question 3:

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



Options:

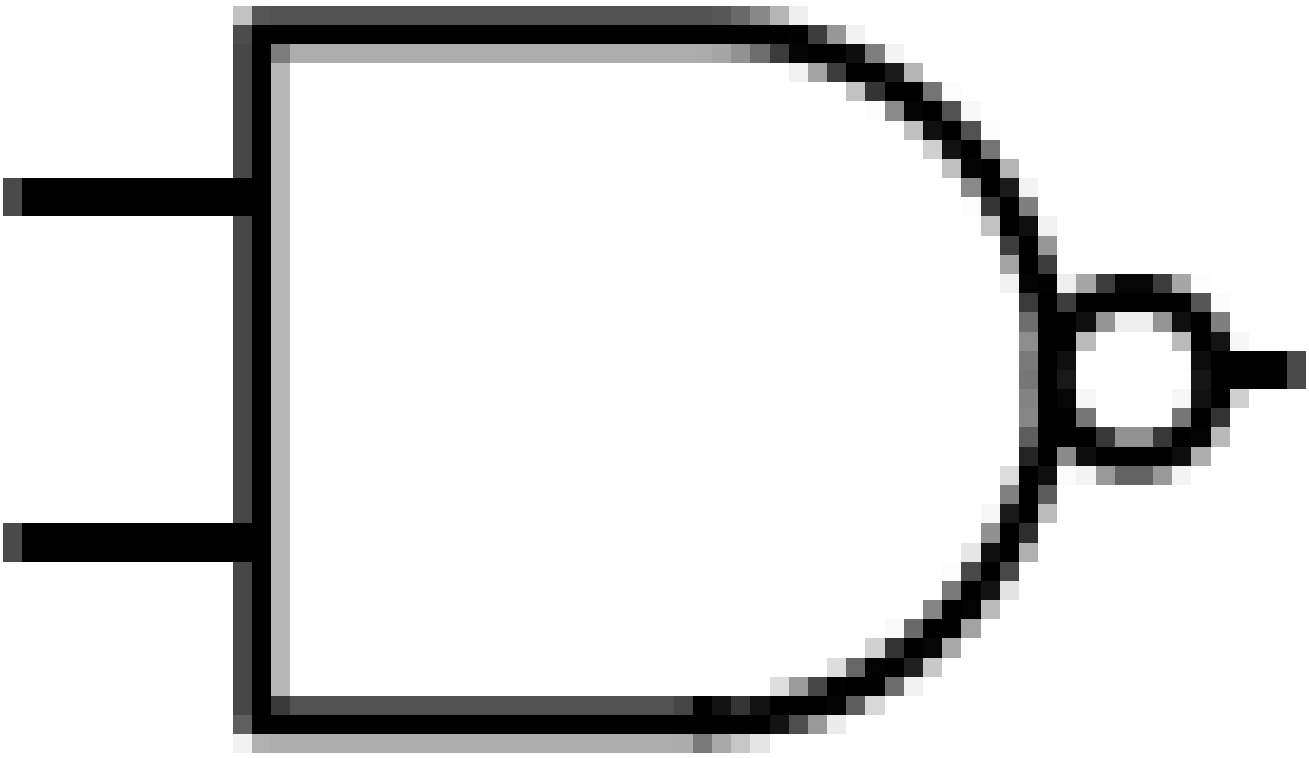
1. 1

2. 0

Correct Answer: 1

Question 4:

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



Options:

1. 0

2. 1

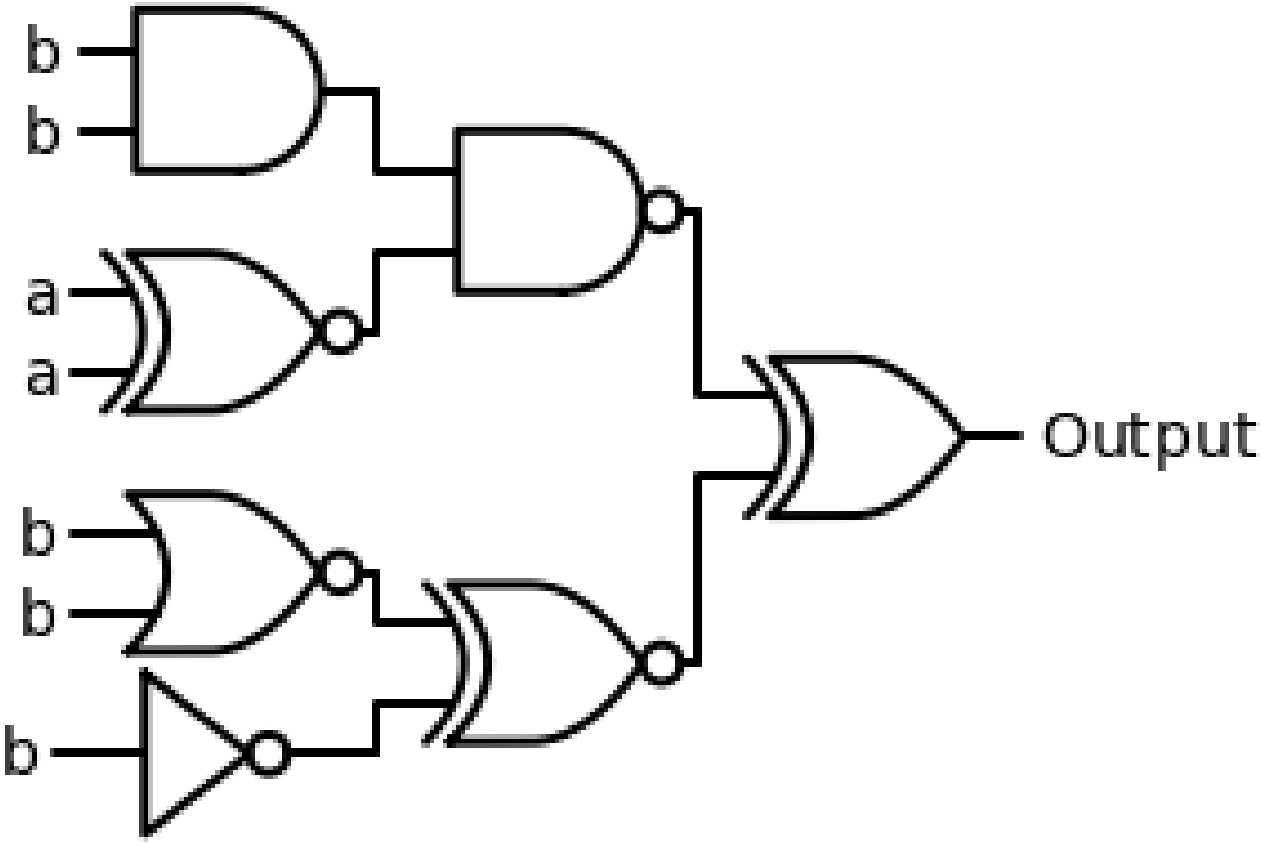
Correct Answer: 1

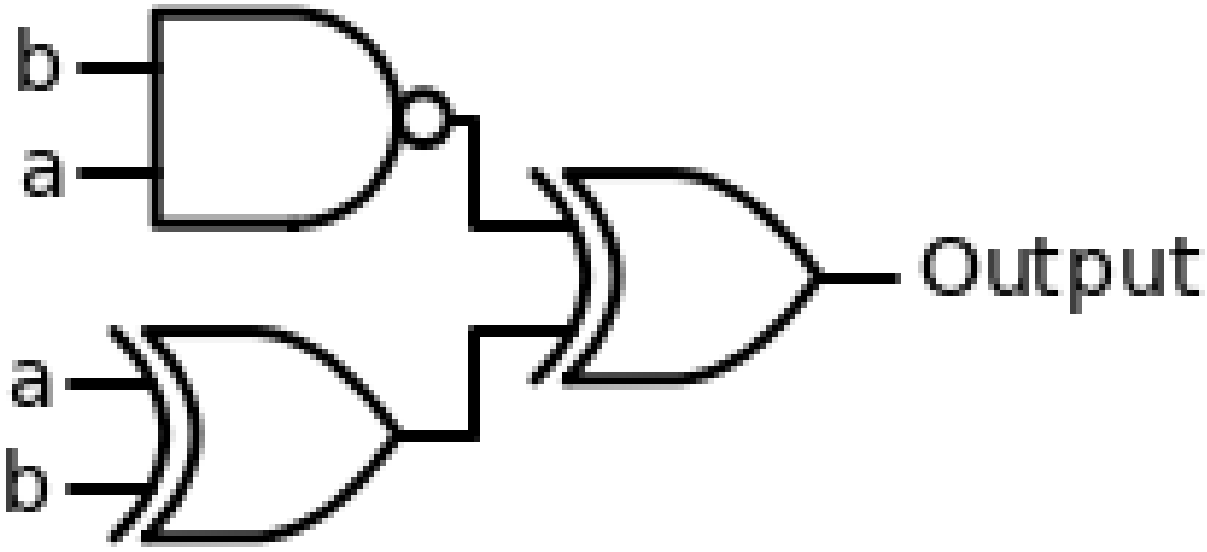
Question 5:

Are these two circuits equivalent?

Expression 1: (((b and b) nand (a xnor a)) xor ((b nor b) xnor (not b)))

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





Options:

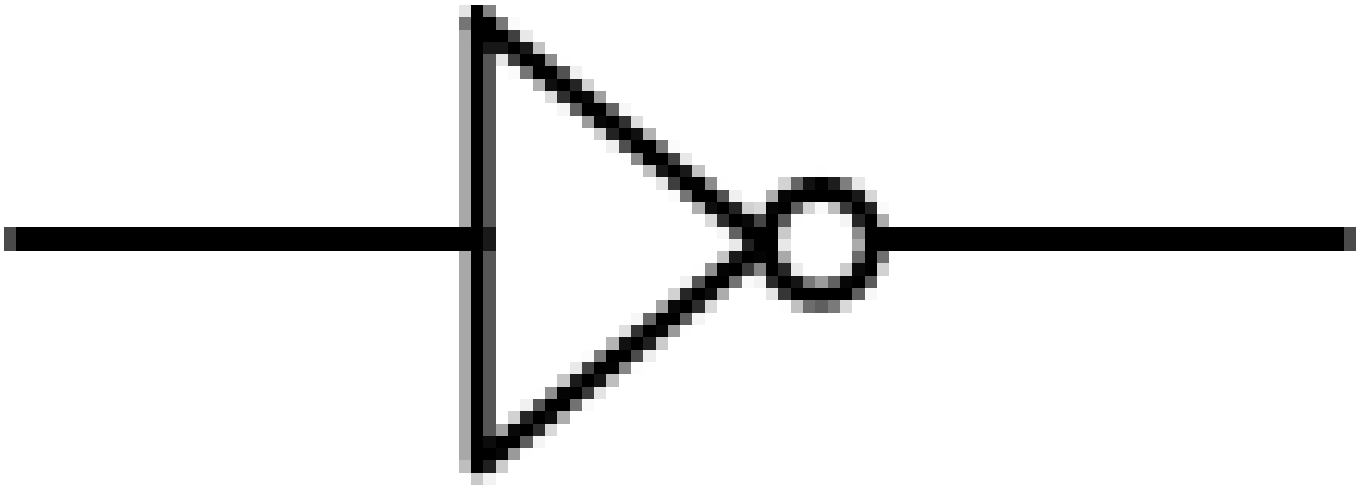
1. Yes

2. No

Correct Answer: no

Question 6:

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



Options:

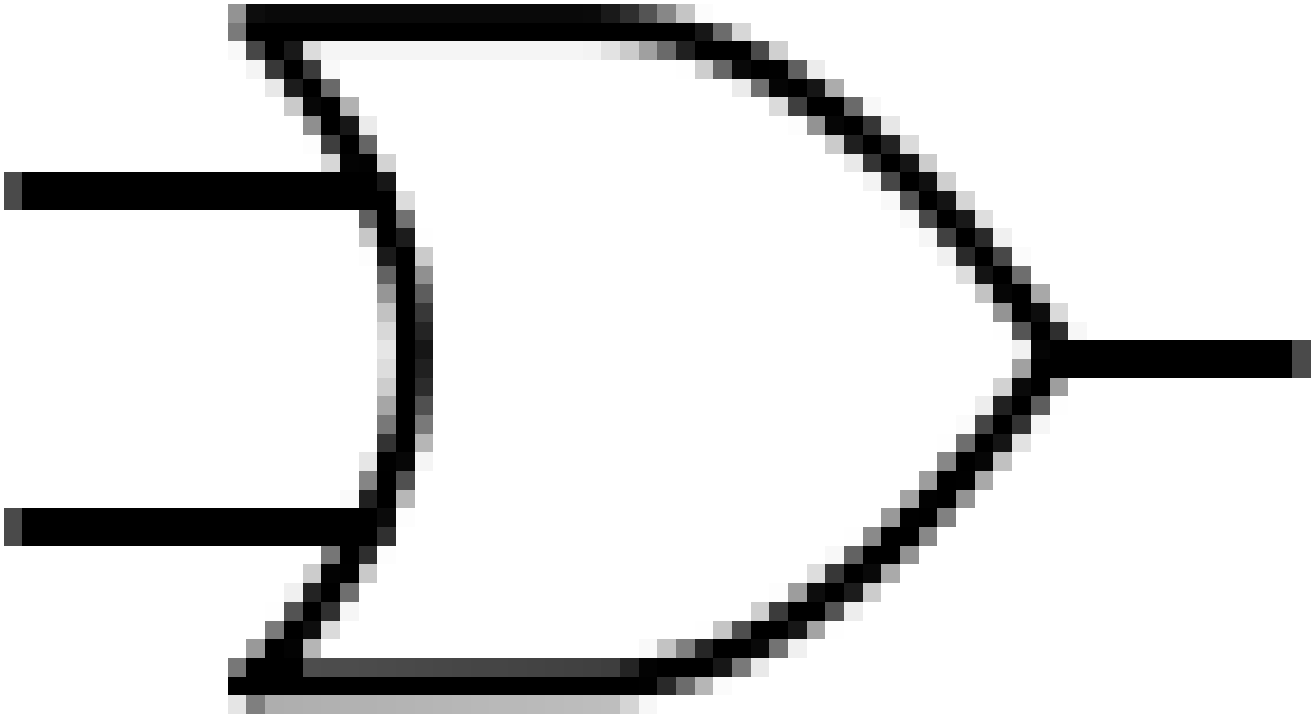
1. 0

2. 1

Correct Answer: 0

Question 7:

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



Options:

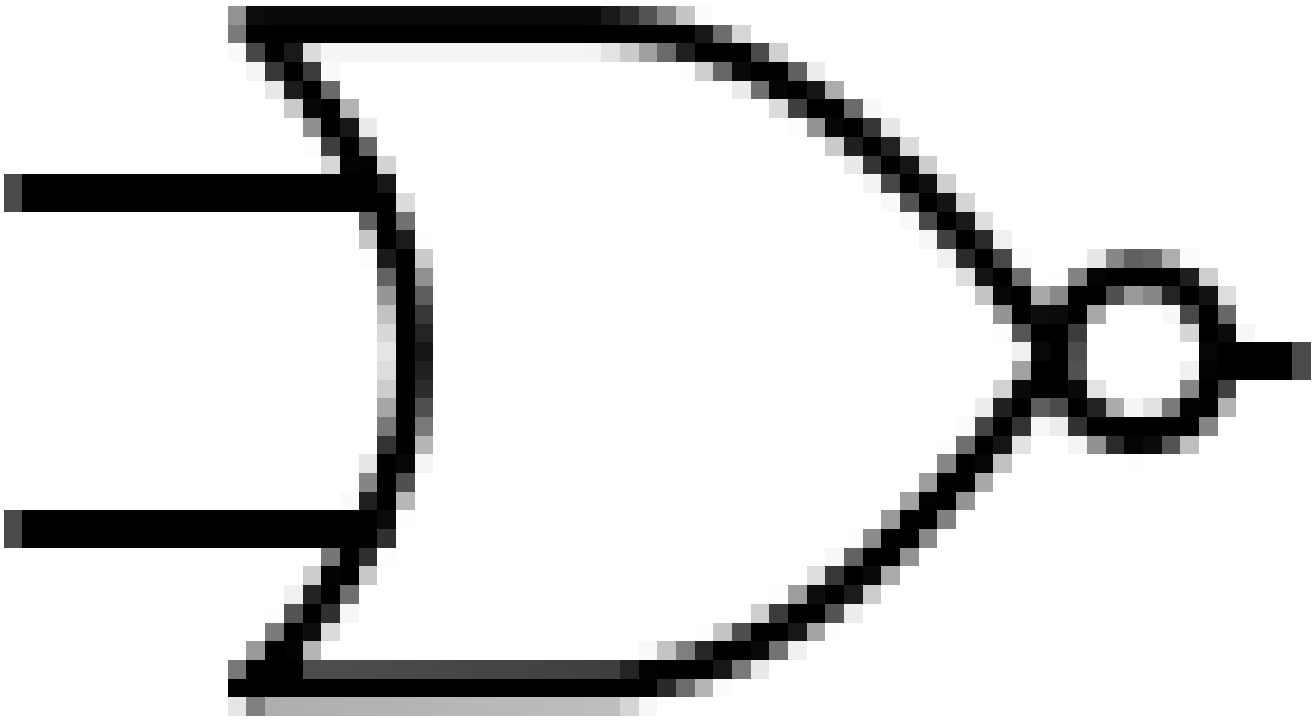
1. 0

2. 1

Correct Answer: 1

Question 8:

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



Options:

1. 1

2. 0

Correct Answer: 0

Question 9:

Are these two circuits equivalent?

Expression 1: (b nor c)

Expression 2: (b nor c)

Options:

1. Yes

2. No

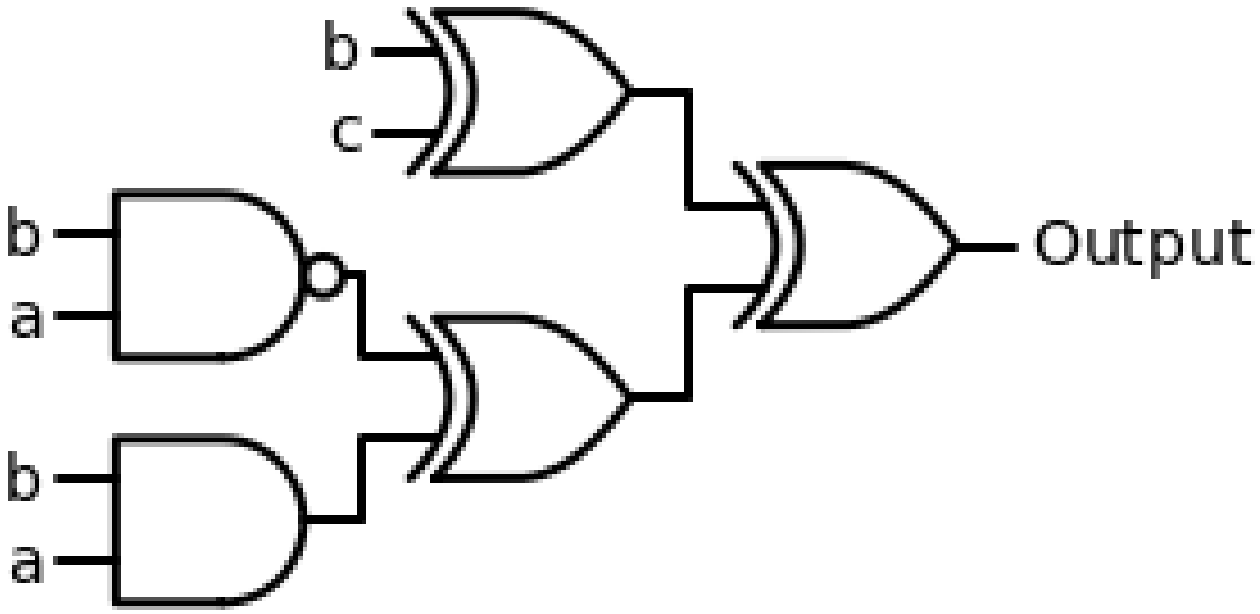
Correct Answer: yes

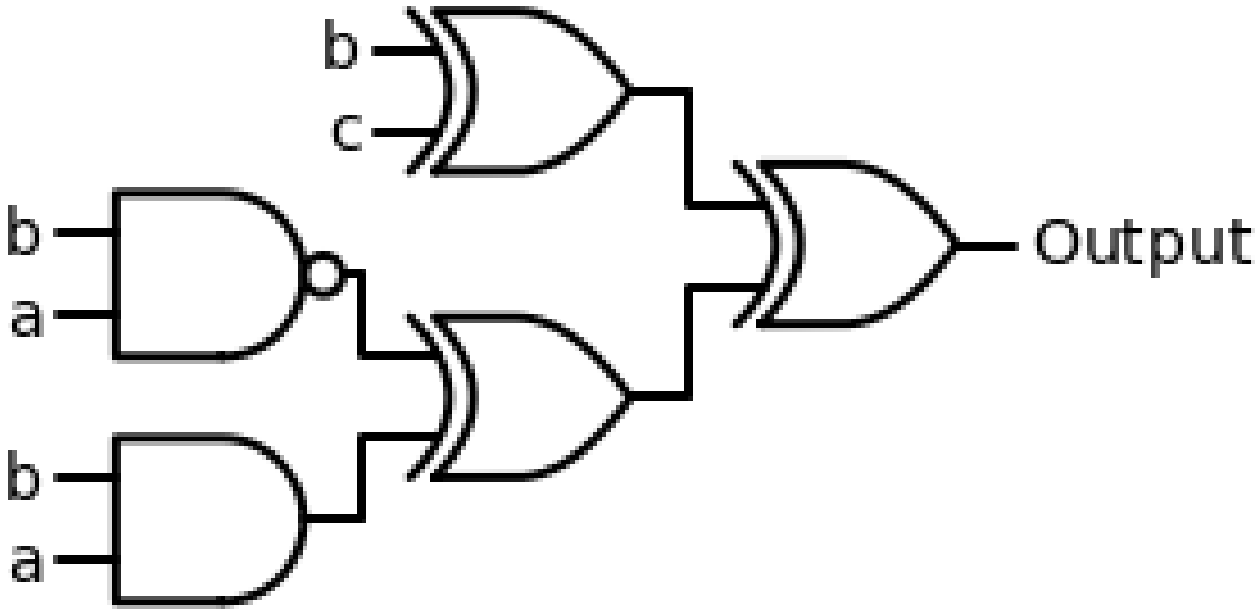
Question 10:

Are these two circuits equivalent?

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

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





Options:

1. Yes

2. No

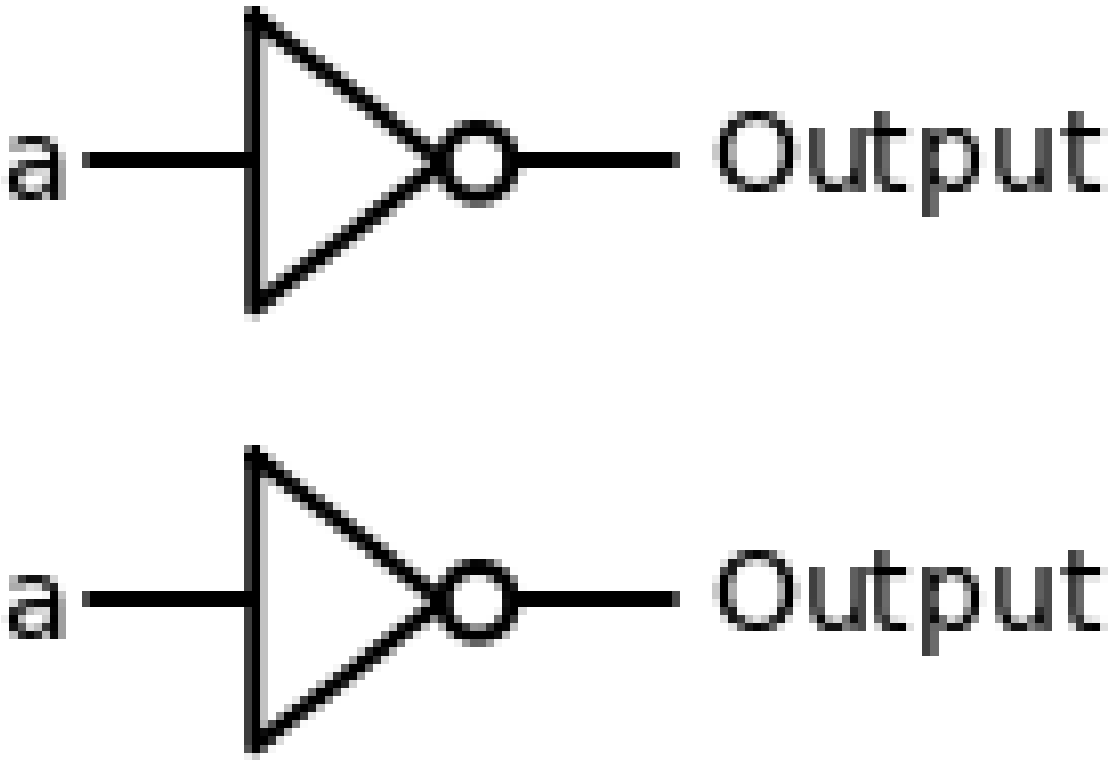
Correct Answer: yes

Question 11:

Are these two circuits equivalent?

Expression 1: (not a)

Expression 2: (not a)



Options:

1. Yes

2. No

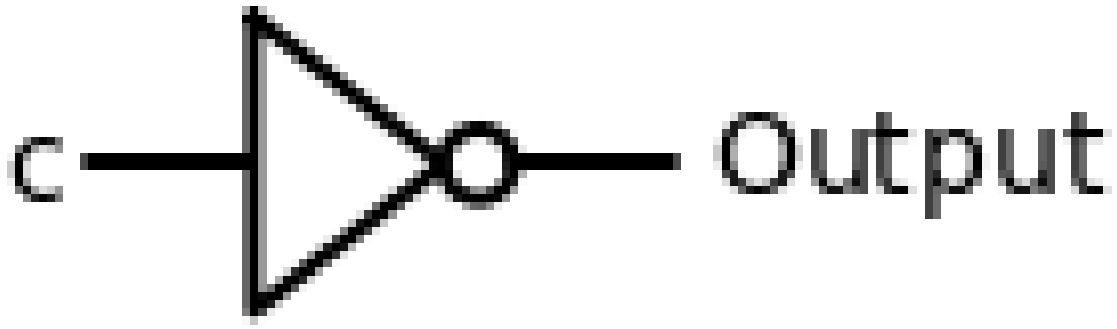
Correct Answer: yes

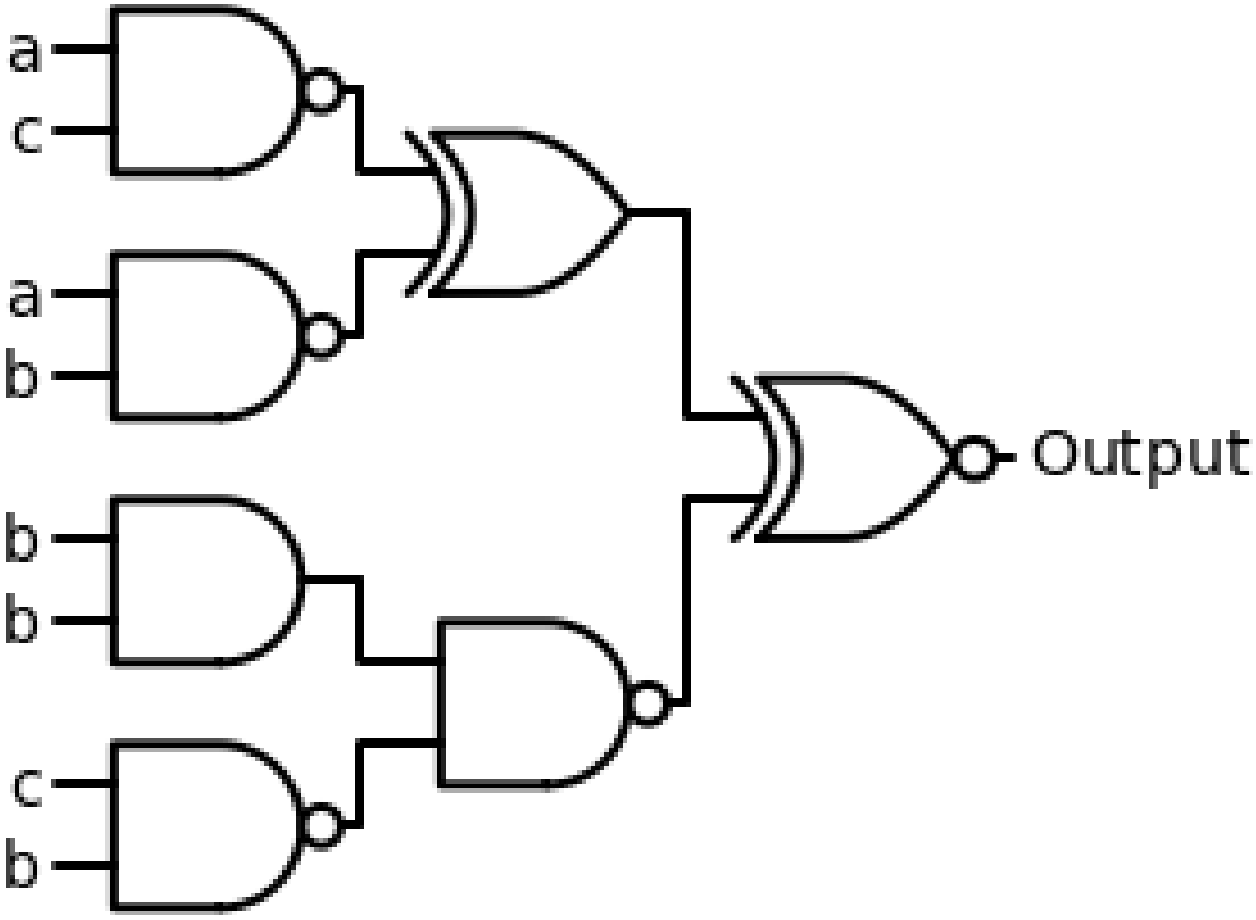
Question 12:

Are these two circuits equivalent?

Expression 1: (not c)

Expression 2: (((a nand c) xor (a nand b)) xnor ((b and b) nand (c nand b)))





Options:

1. Yes

2. No

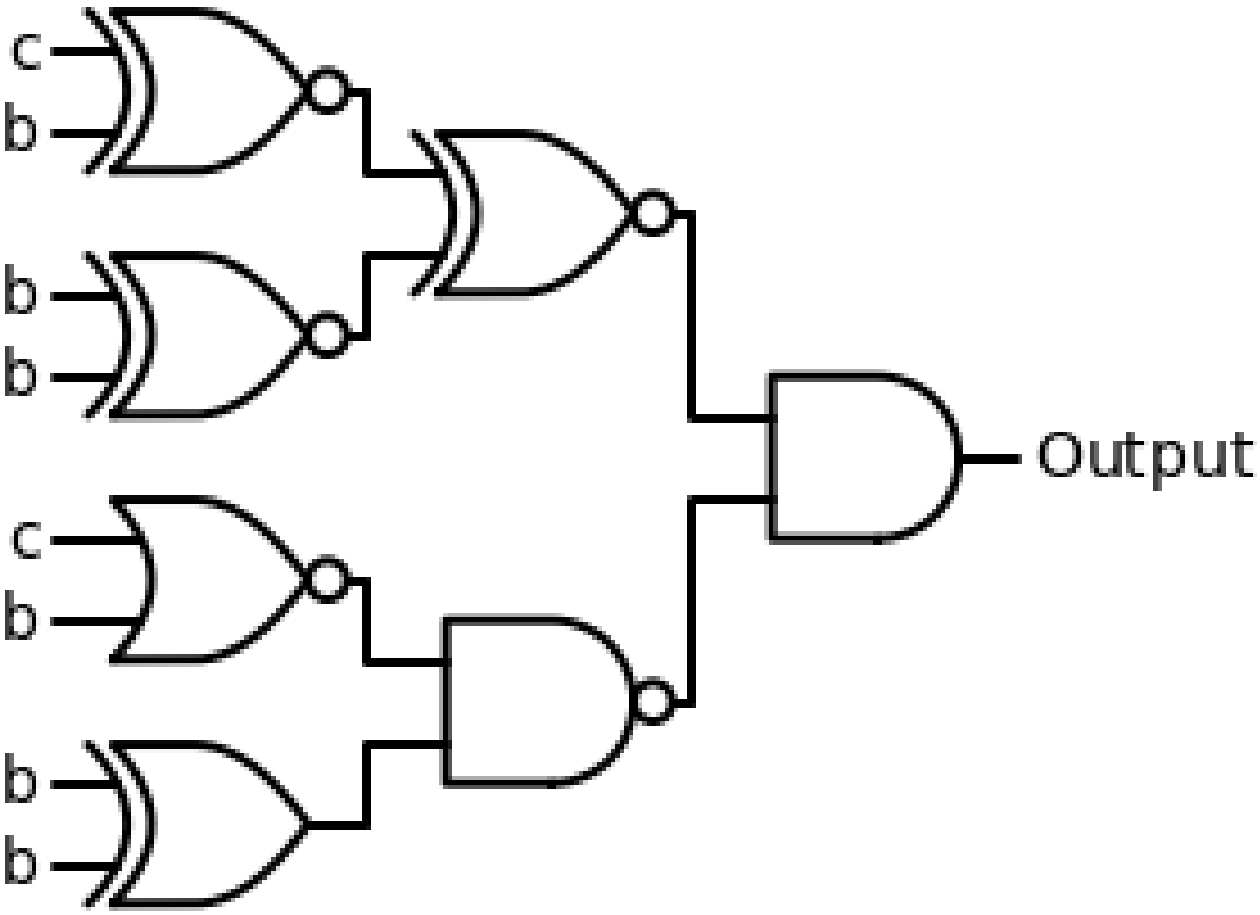
Correct Answer: no

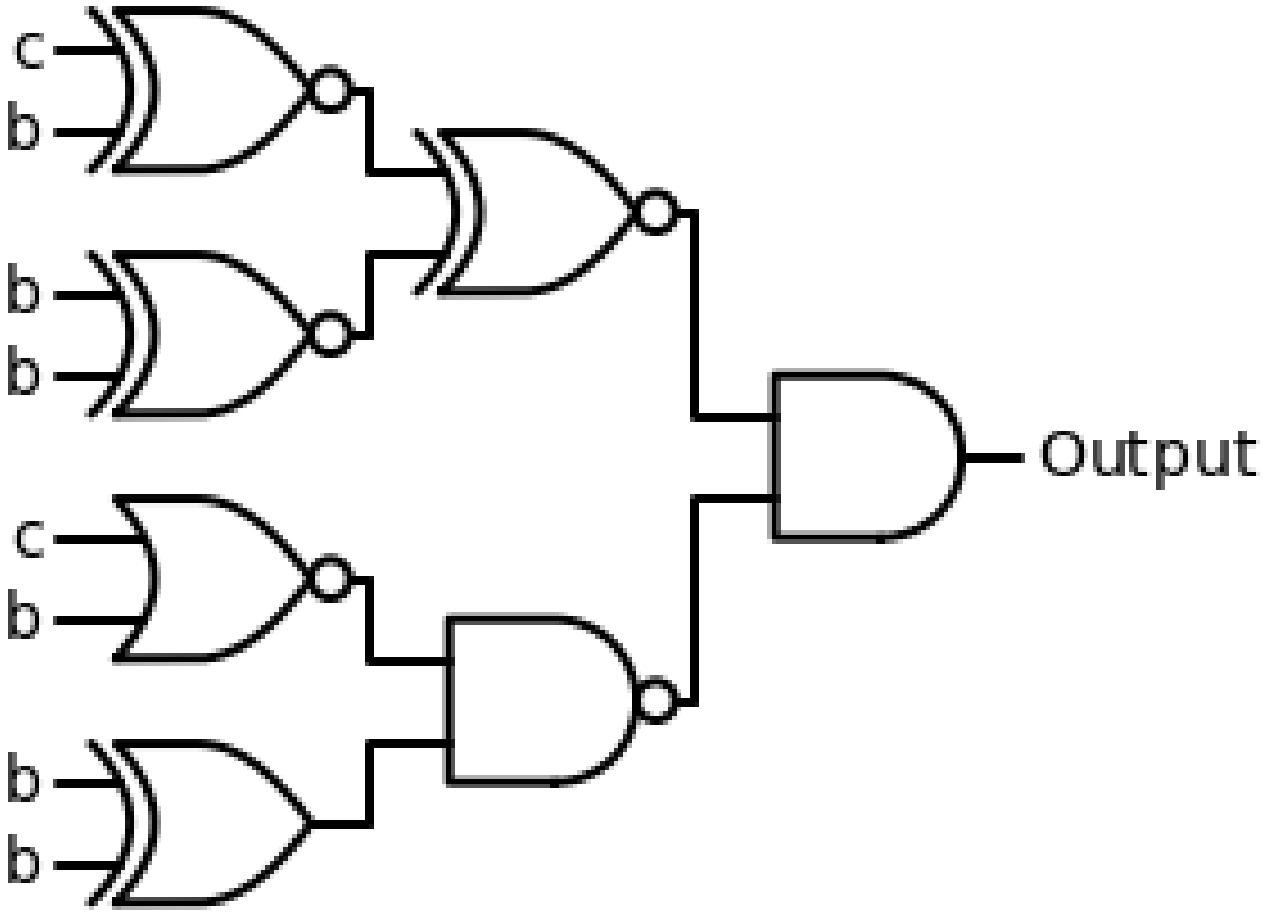
Question 13:

Are these two circuits equivalent?

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

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





Options:

1. Yes

2. No

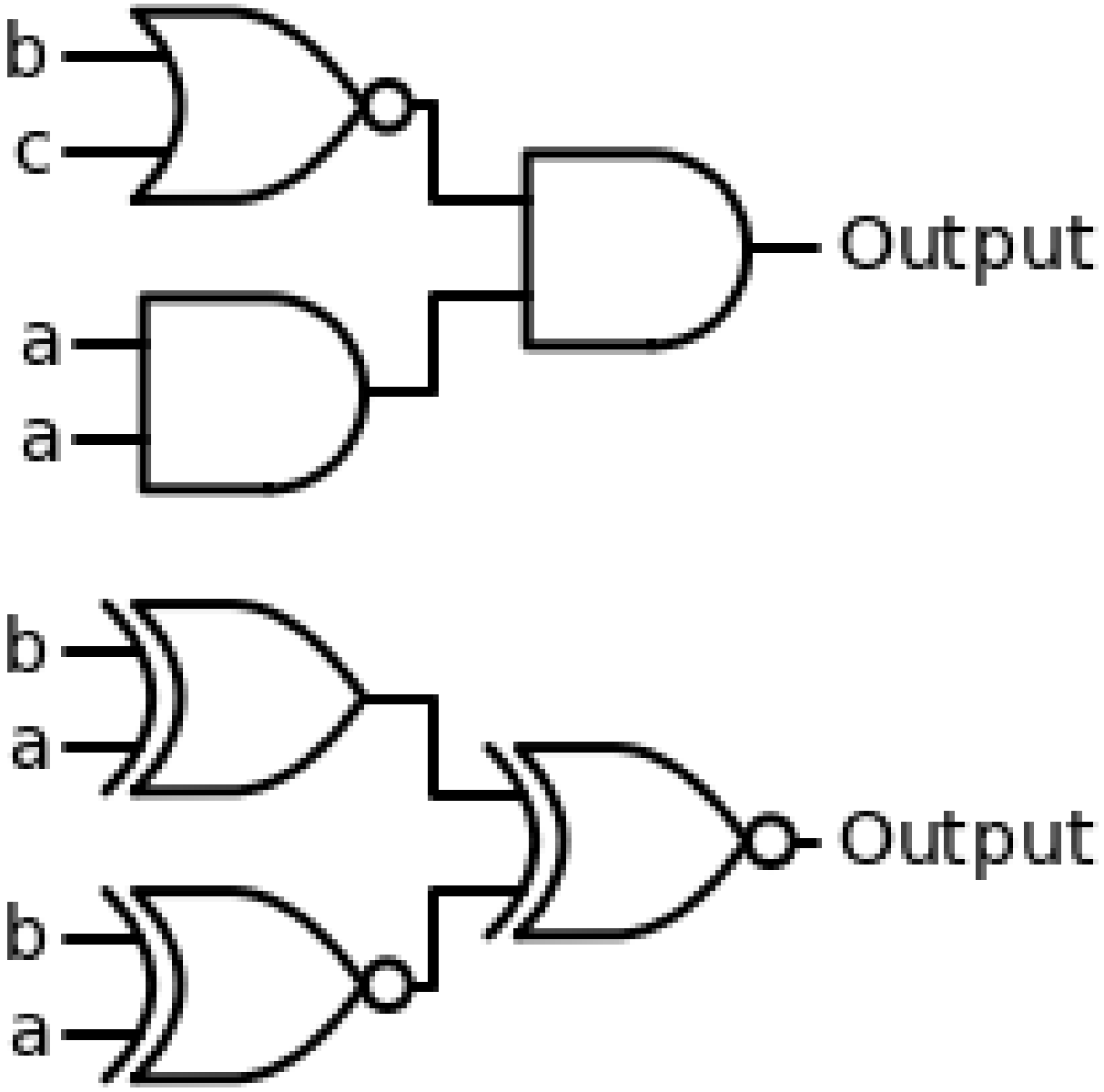
Correct Answer: yes

Question 14:

Are these two circuits equivalent?

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

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



Options:

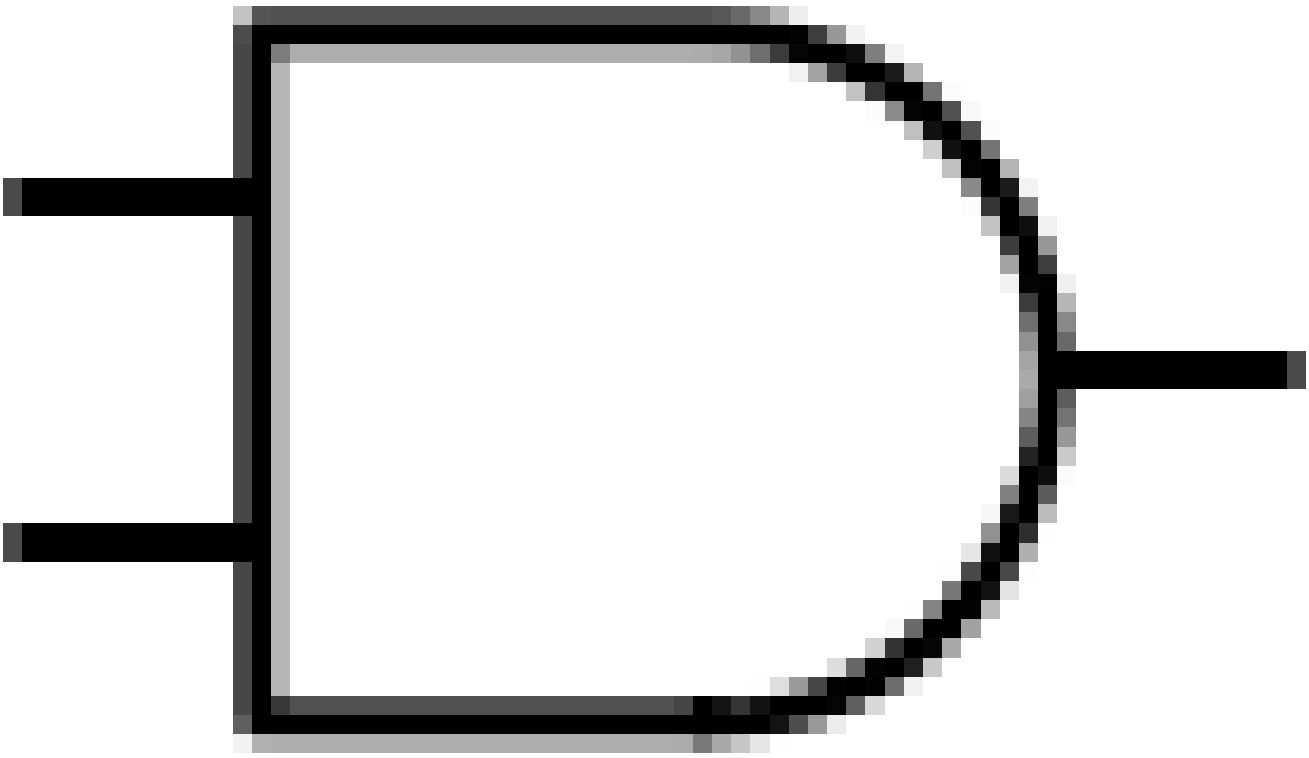
1. Yes

2. No

Correct Answer: no

Question 15:

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



Options:

1. 1

2. 0

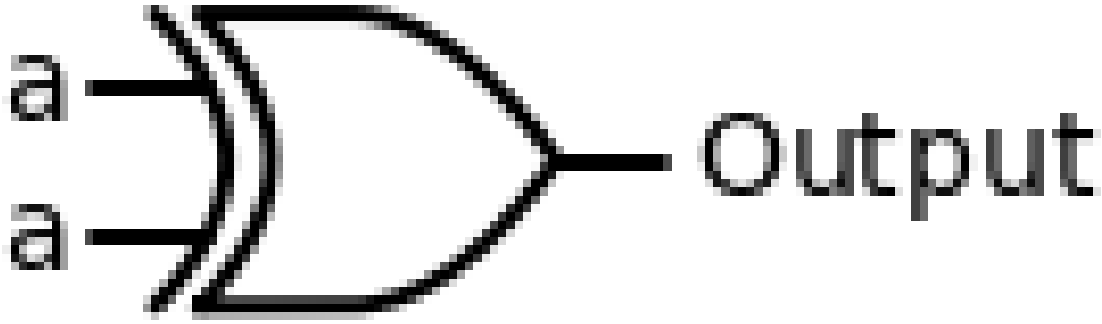
Correct Answer: 0

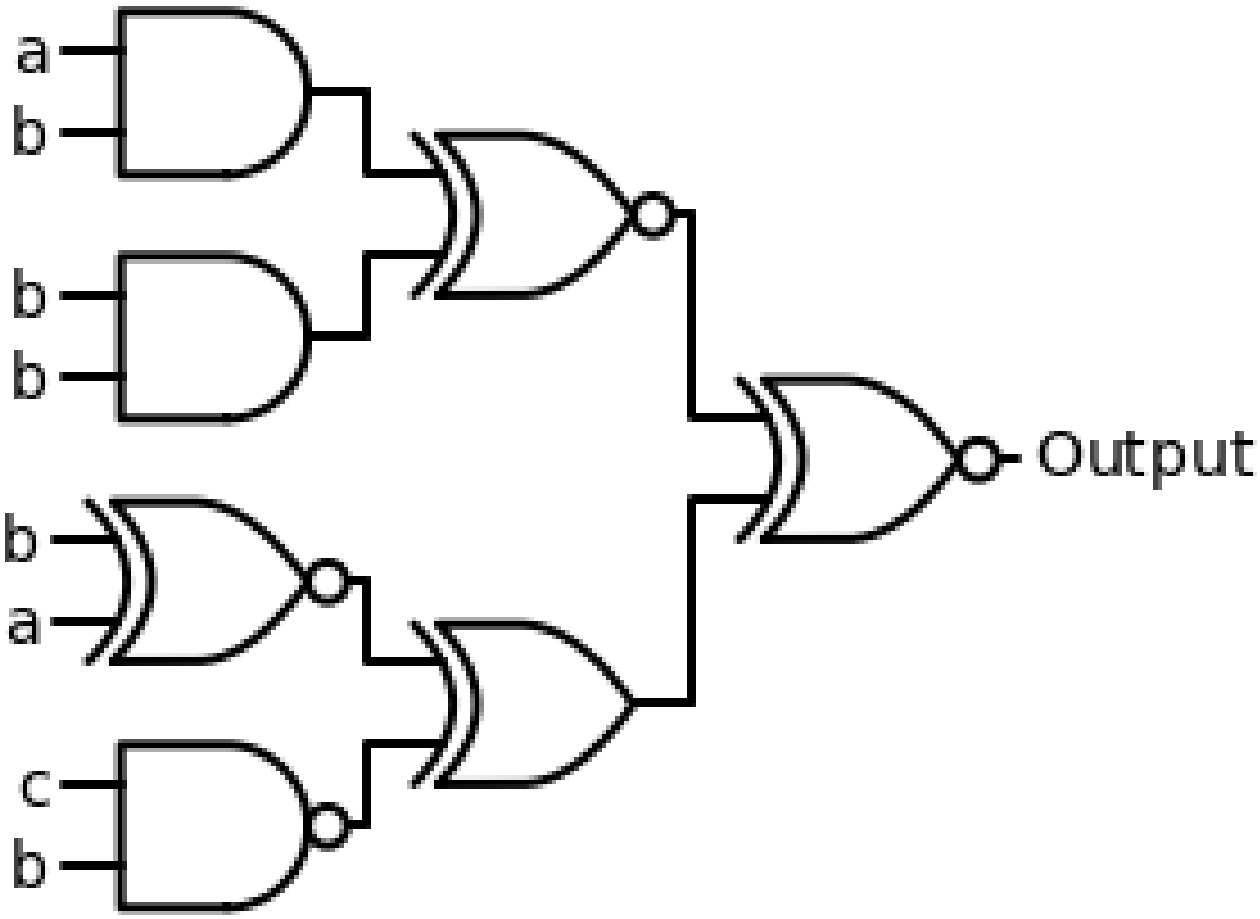
Question 16:

Are these two circuits equivalent?

Expression 1: (a xor a)

Expression 2: (((a and b) xnor (b and b)) xnor ((b xnor a) xor (c nand b)))





Options:

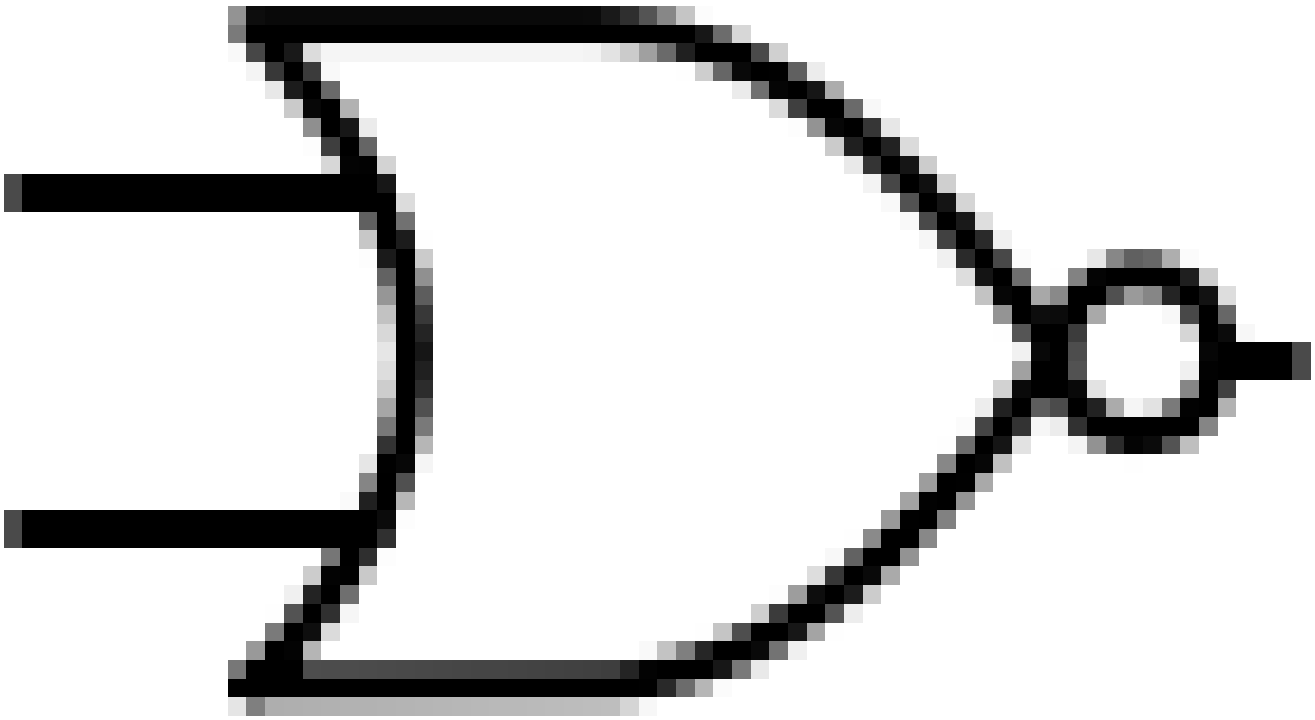
1. Yes

2. No

Correct Answer: no

Question 17:

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



Options:

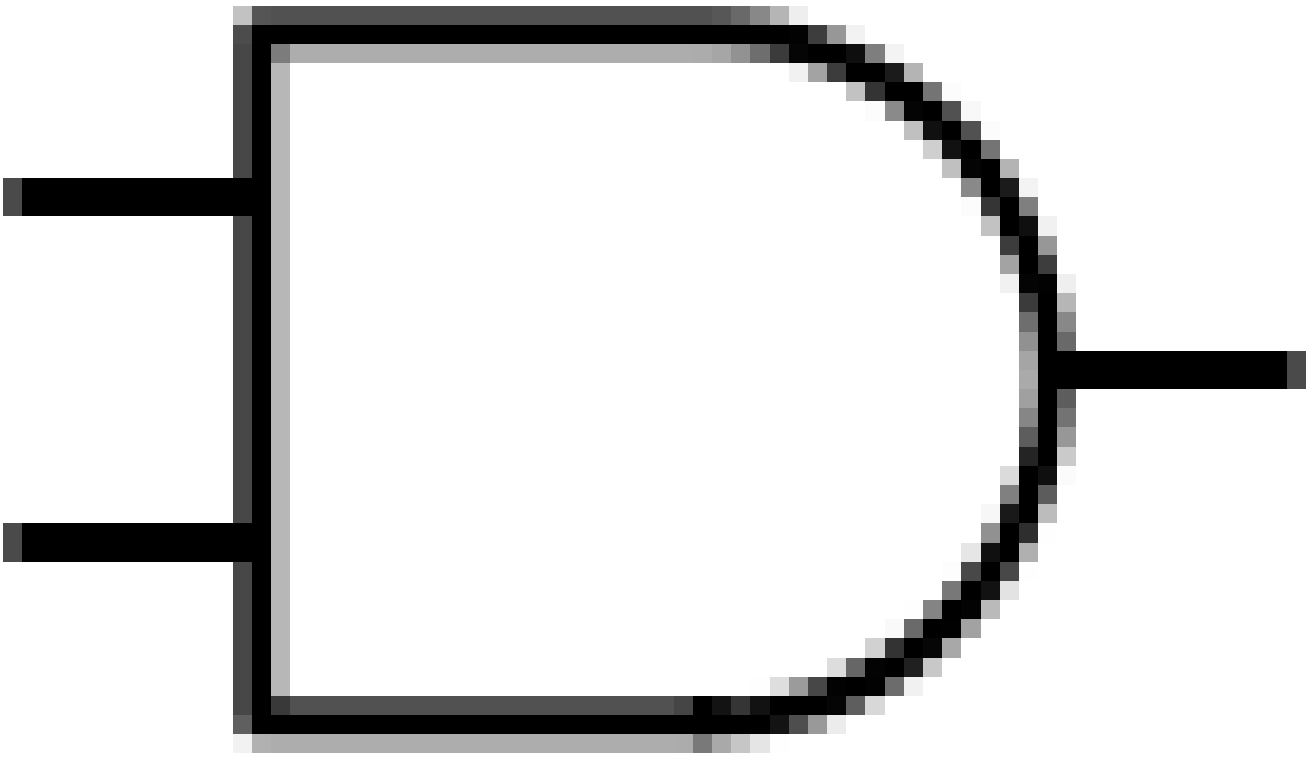
1. 1

2. 0

Correct Answer: 0

Question 18:

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



Options:

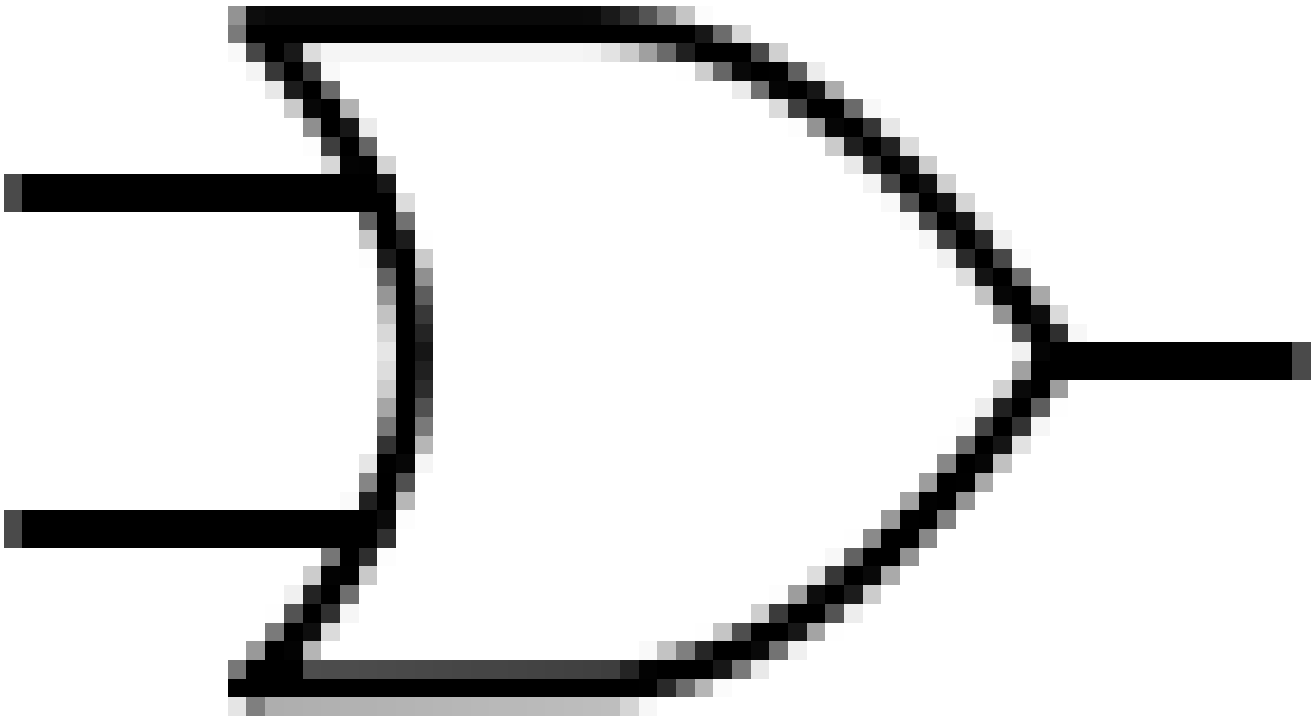
1. 0

2. 1

Correct Answer: 0

Question 19:

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



Options:

1. 0

2. 1

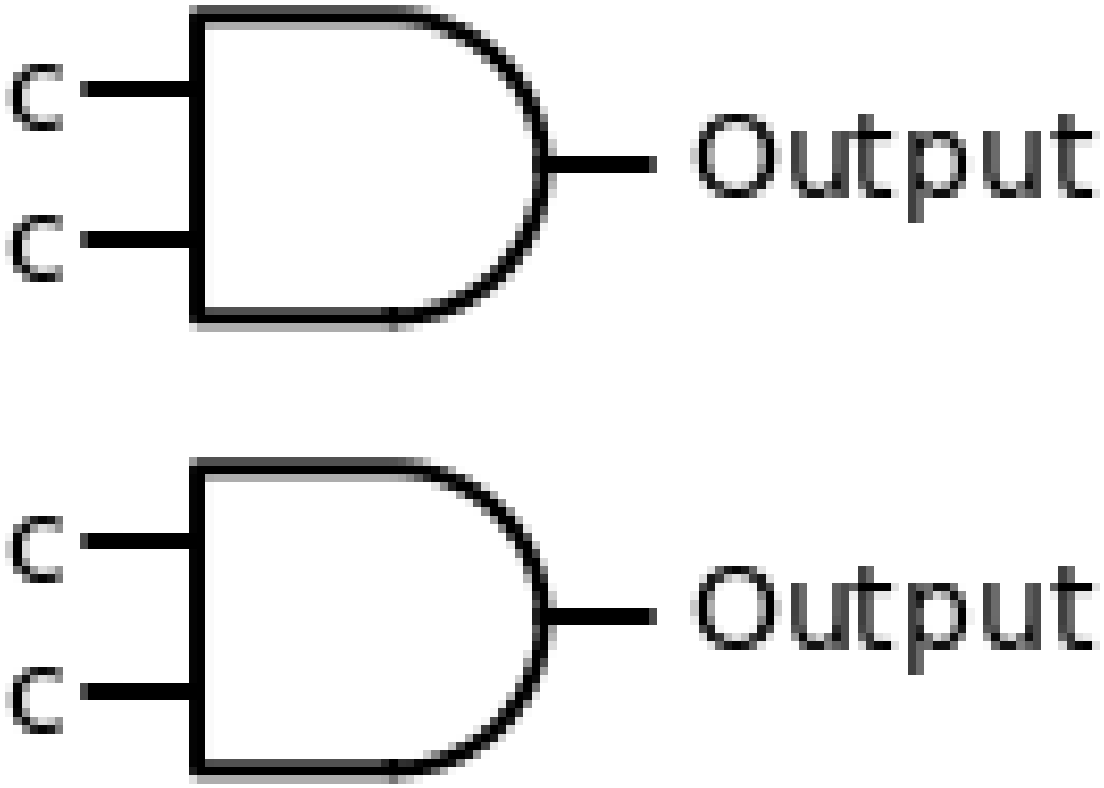
Correct Answer: 1

Question 20:

Are these two circuits equivalent?

Expression 1: (c and c)

Expression 2: (c and c)



Options:

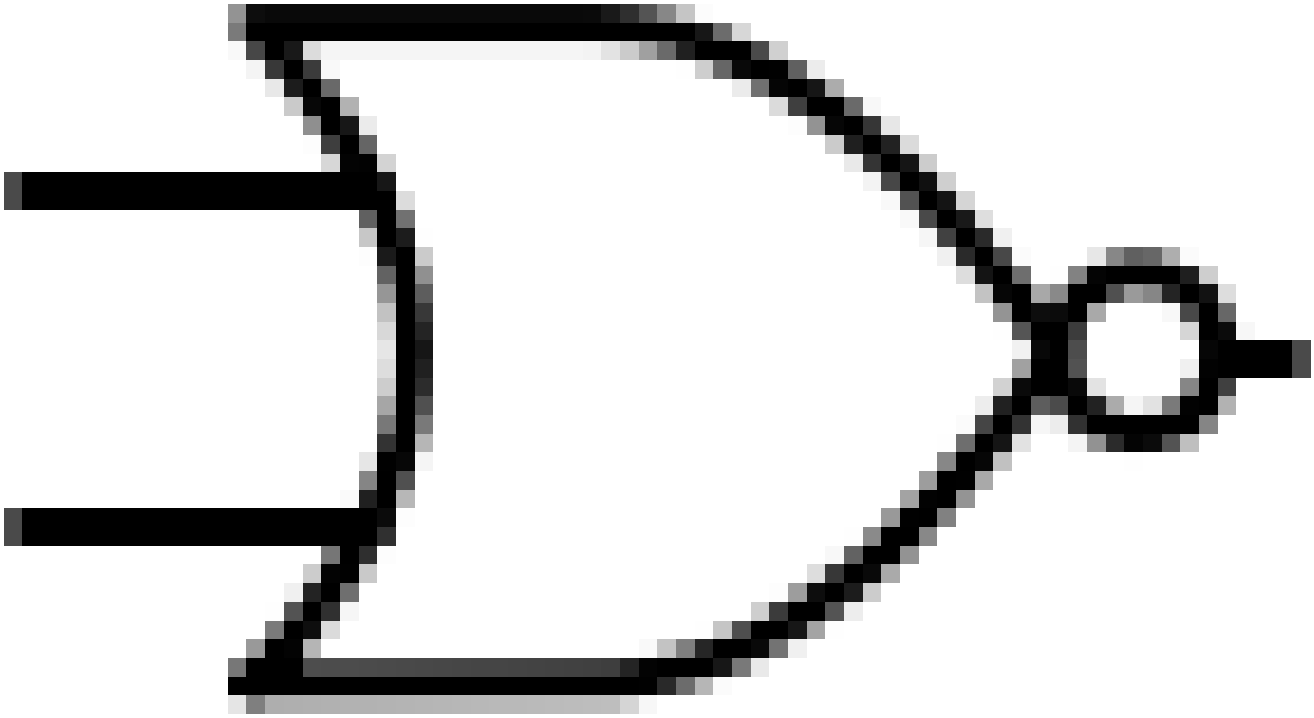
1. Yes

2. No

Correct Answer: yes

Question 21:

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



Options:

1. 0

2. 1

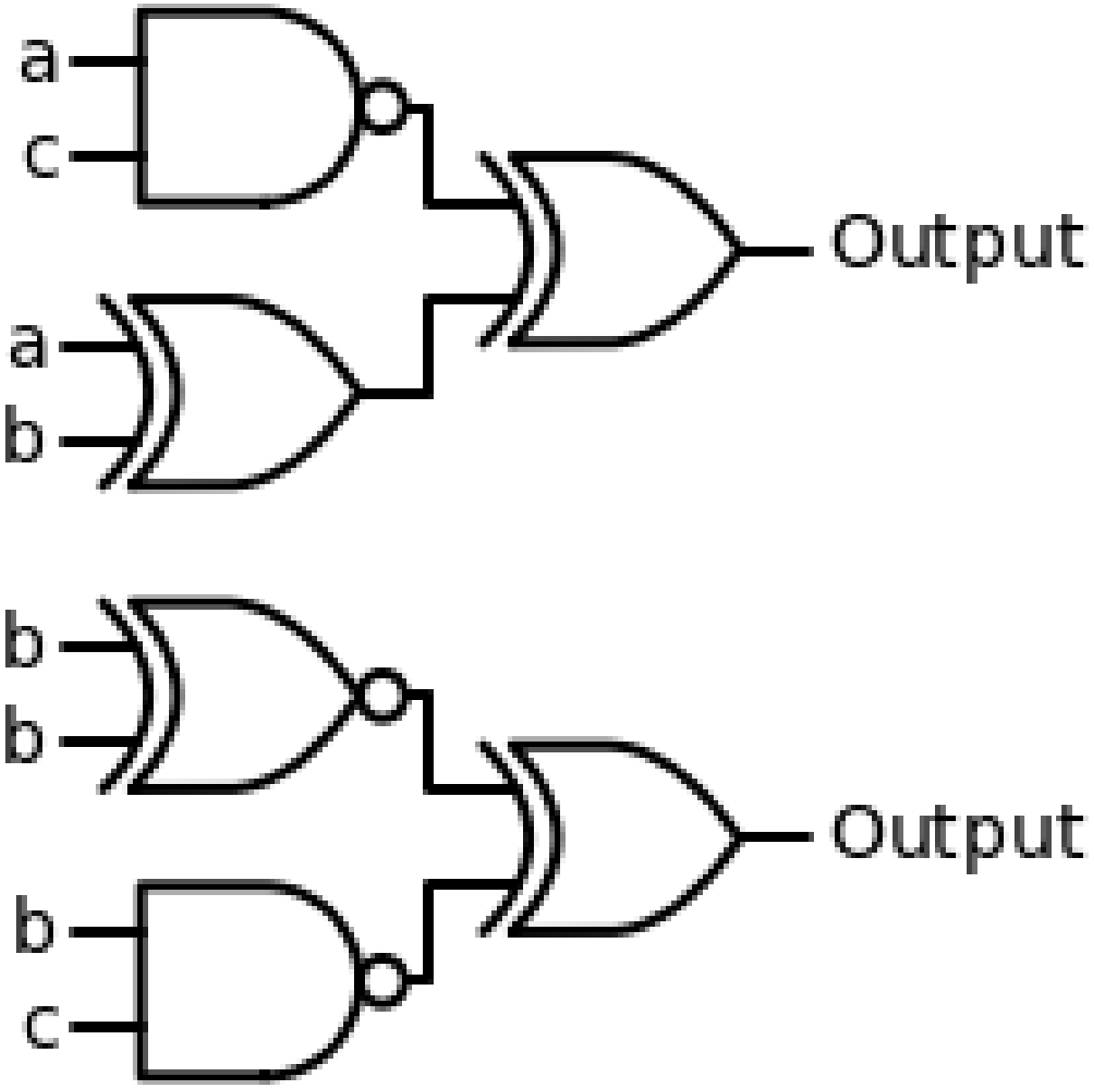
Correct Answer: 1

Question 22:

Are these two circuits equivalent?

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

Expression 2: ((b xnor b) xor (b nand c))



Options:

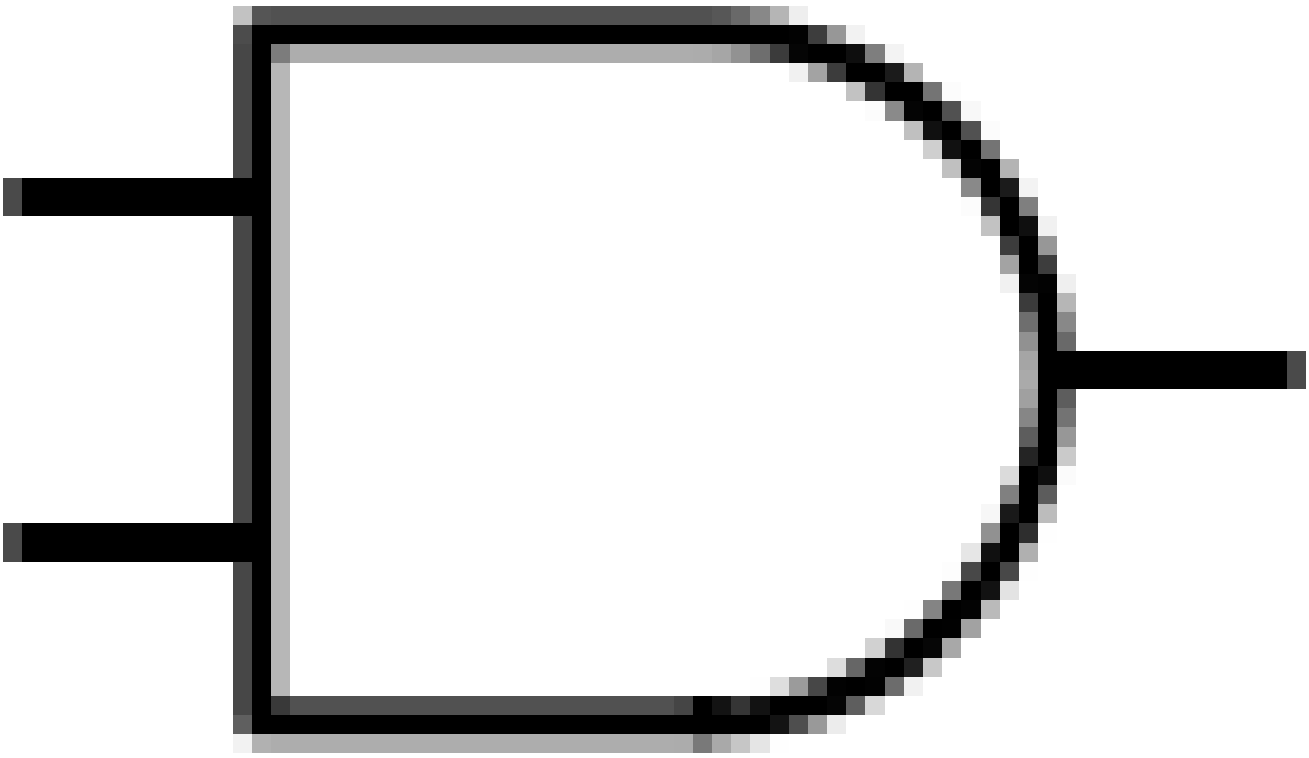
1. Yes

2. No

Correct Answer: no

Question 23:

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



Options:

1. 0

2. 1

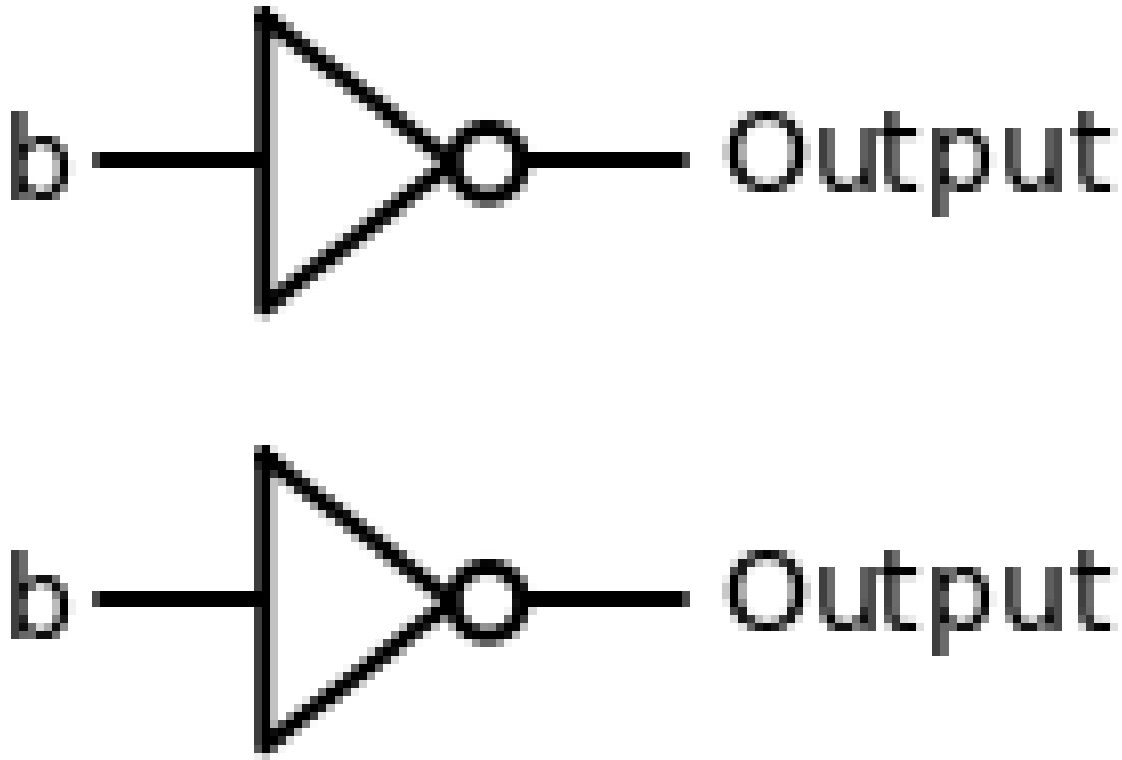
Correct Answer: 0

Question 24:

Are these two circuits equivalent?

Expression 1: (not b)

Expression 2: (not b)



Options:

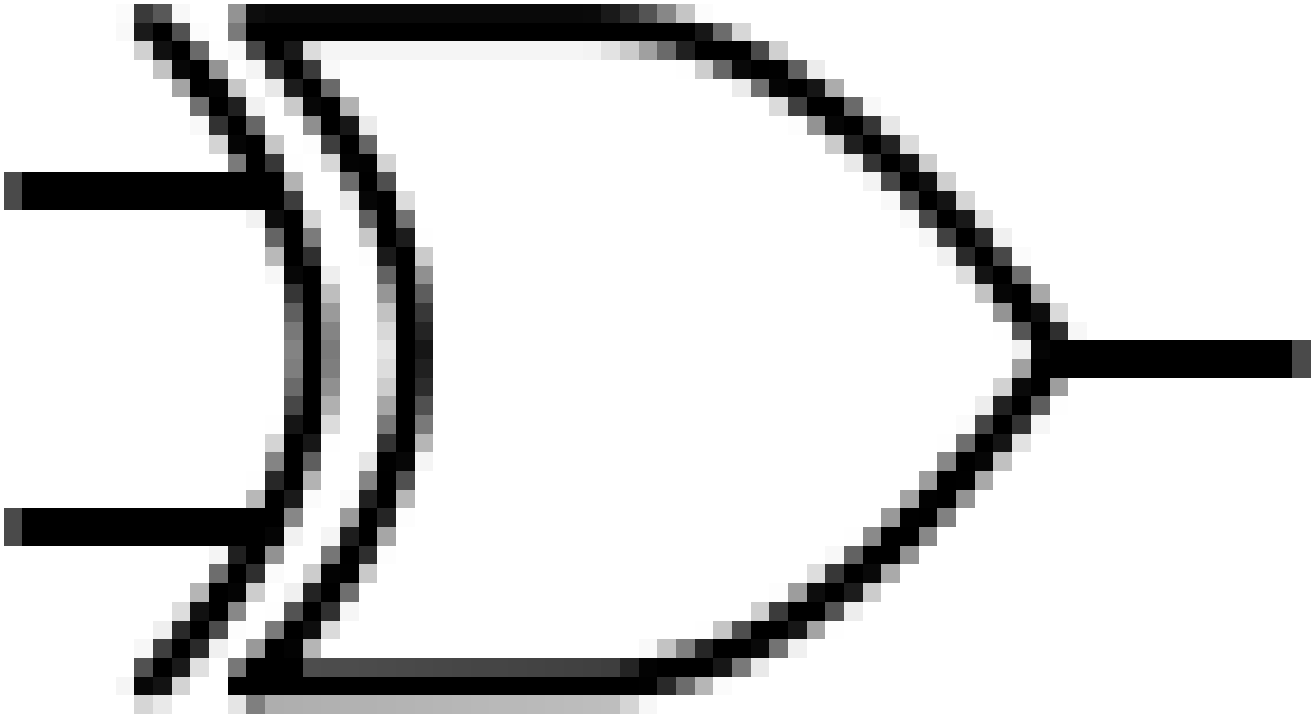
1. Yes

2. No

Correct Answer: yes

Question 25:

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



Options:

1. 0

2. 1

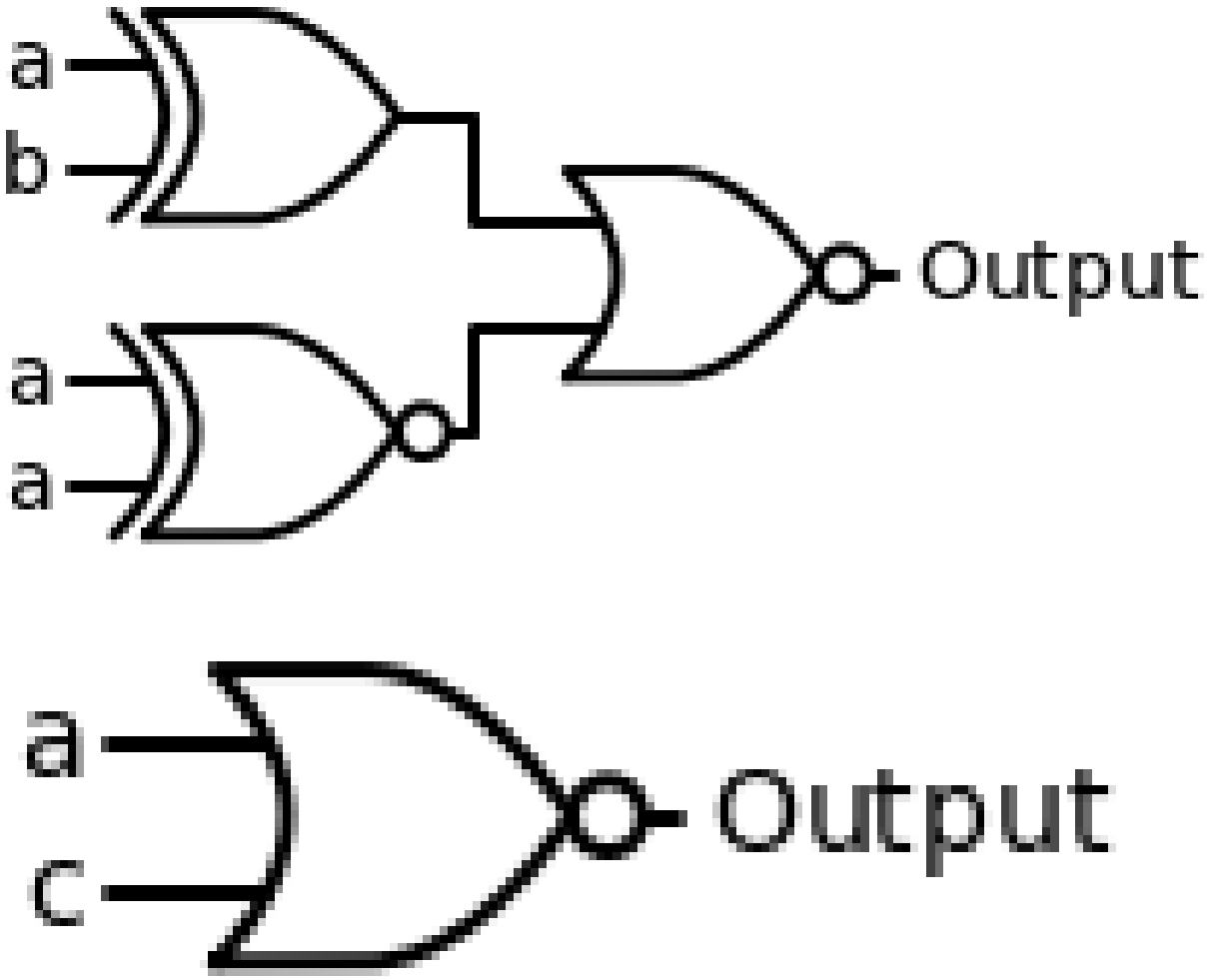
Correct Answer: 0

Question 26:

Are these two circuits equivalent?

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

Expression 2: (a nor c)



Options:

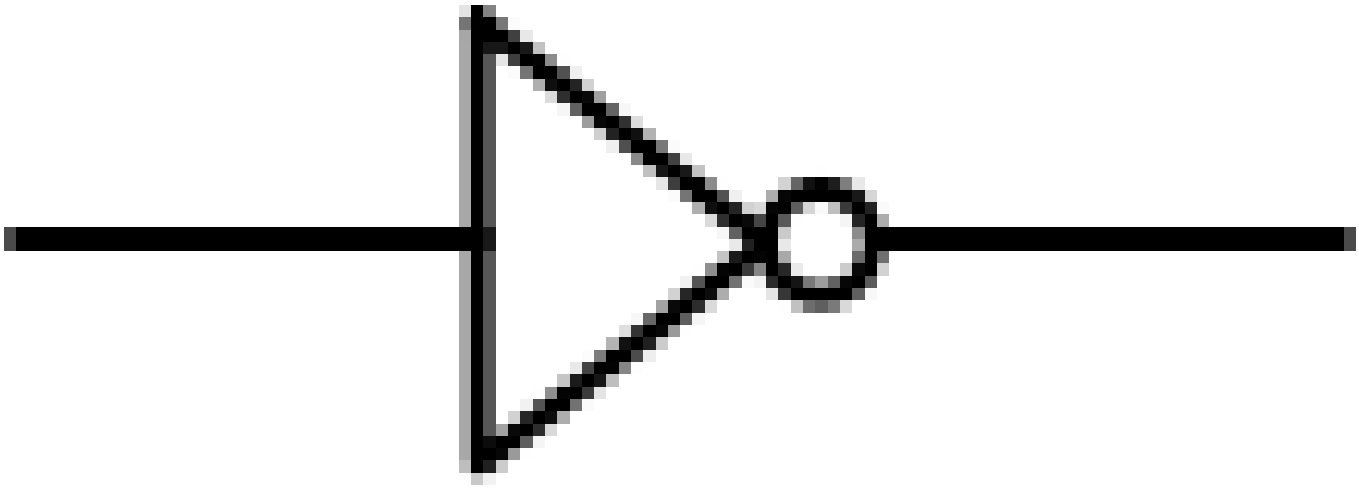
1. Yes

2. No

Correct Answer: no

Question 27:

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



Options:

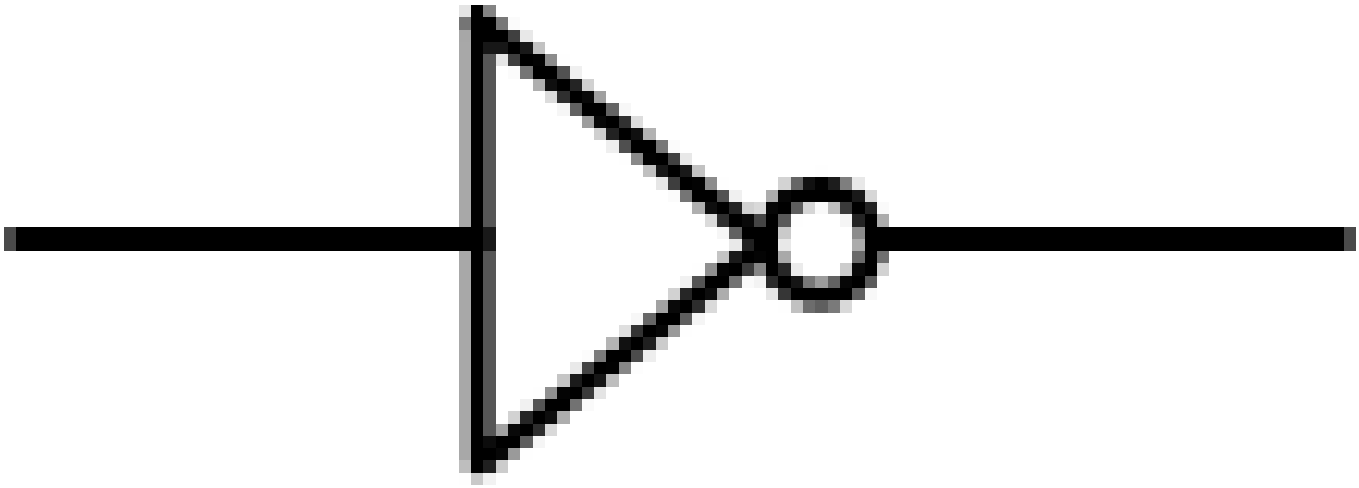
1. 0

2. 1

Correct Answer: 1

Question 28:

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



Options:

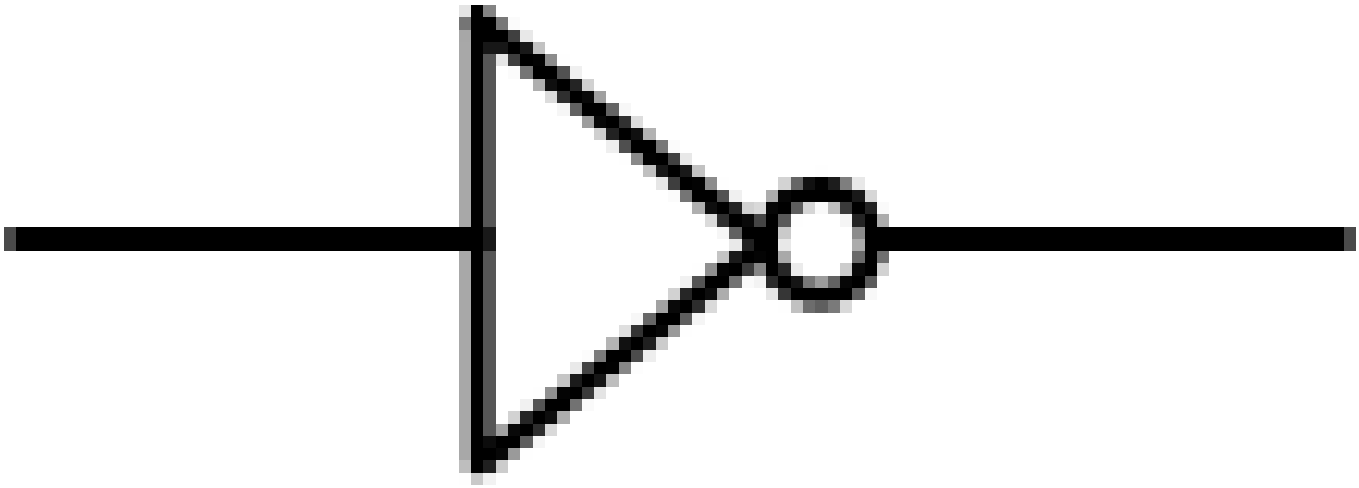
1. 1

2. 0

Correct Answer: 1

Question 29:

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



Options:

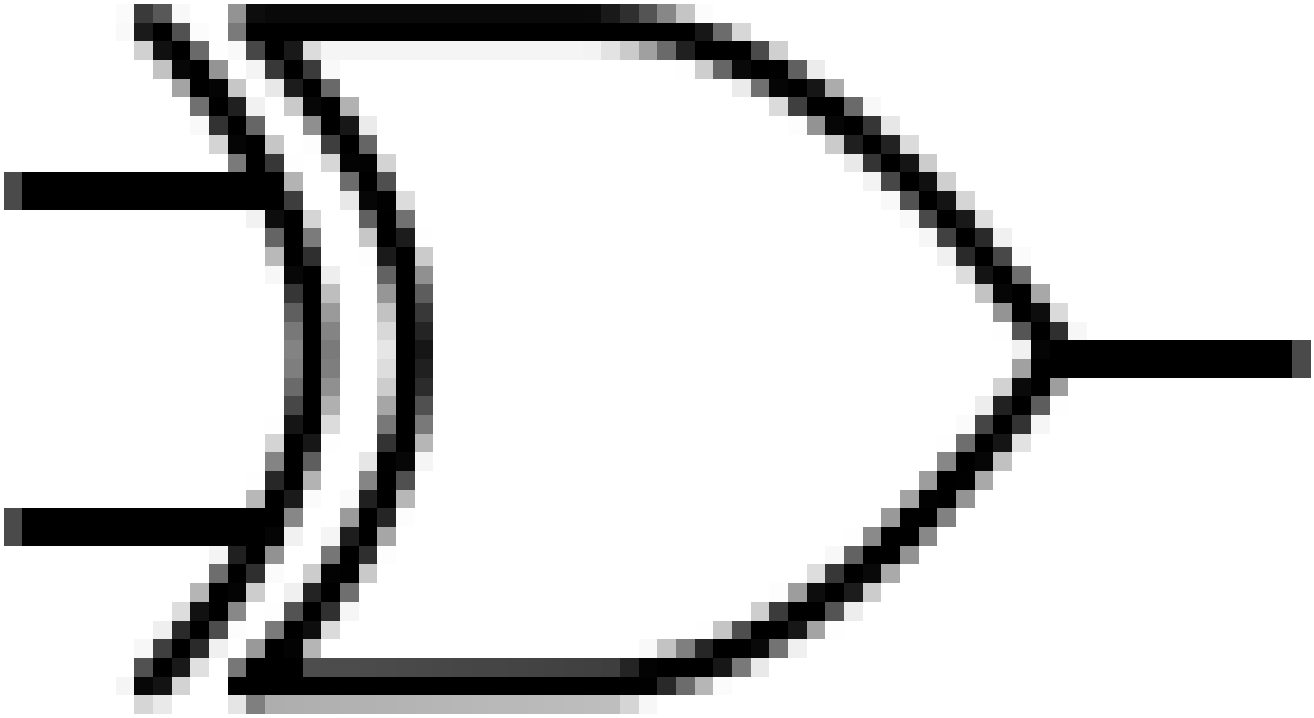
1. 0

2. 1

Correct Answer: 1

Question 30:

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



Options:

1. 0

2. 1

Correct Answer: 0