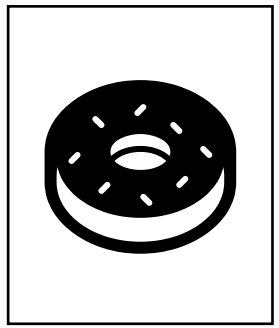
And, Or, Not

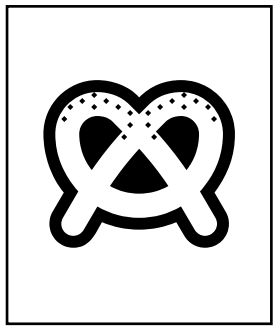
$\cap$ $\cup$ $'$

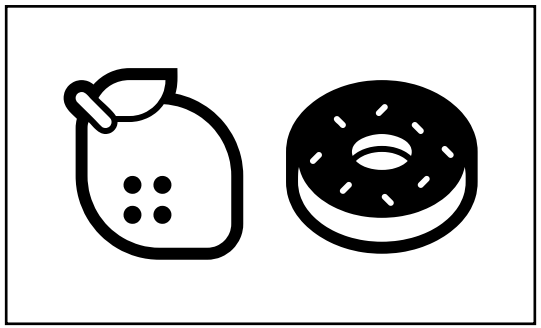
What is returned for this search?

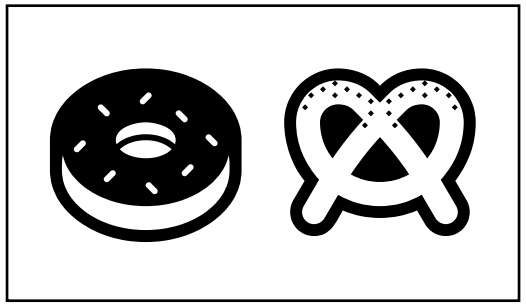
Doughnuts’

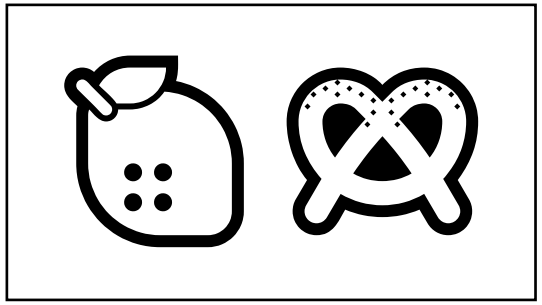
Consider where the doughnuts are.

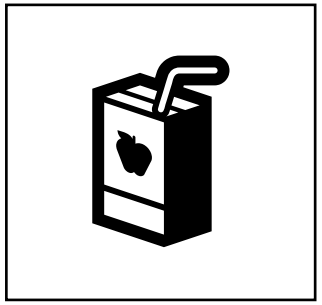








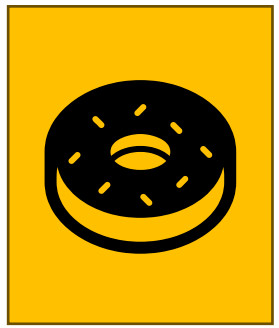


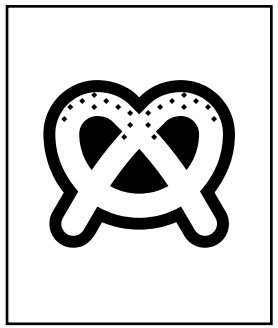


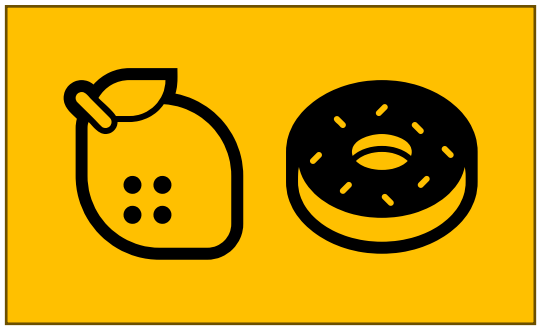
What is returned for this search?

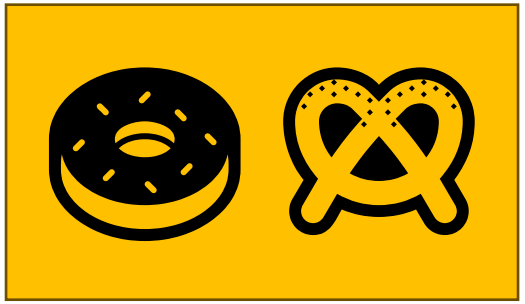
Doughnuts’

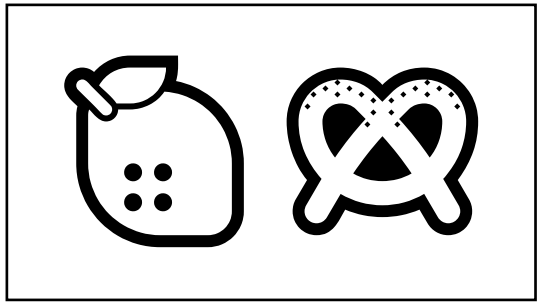
Then, reverse it.

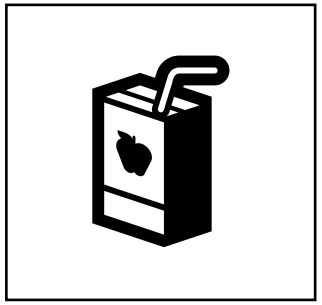








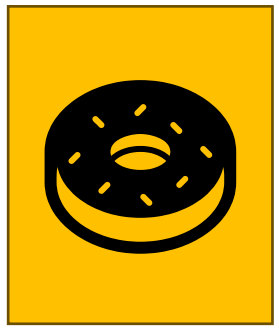


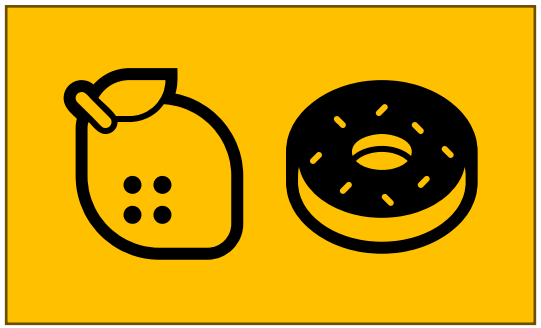


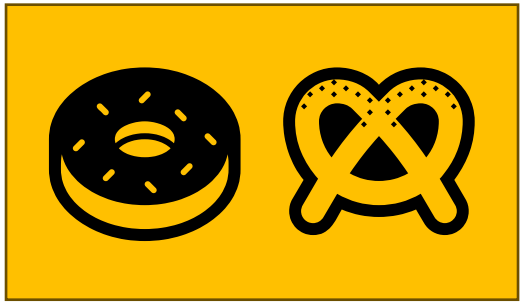
What is returned for this search?

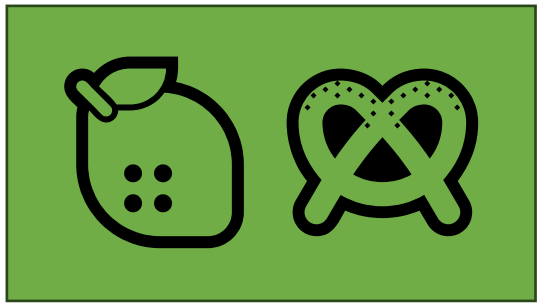
Doughnuts’

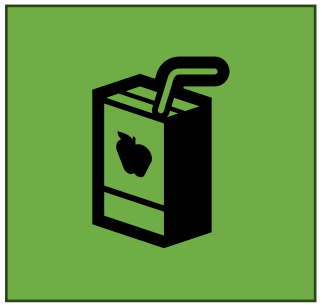
Doughtnuts’ is in green. They get highlighted





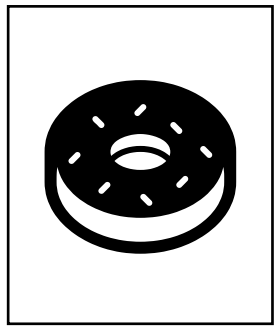


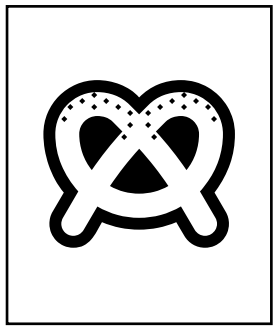


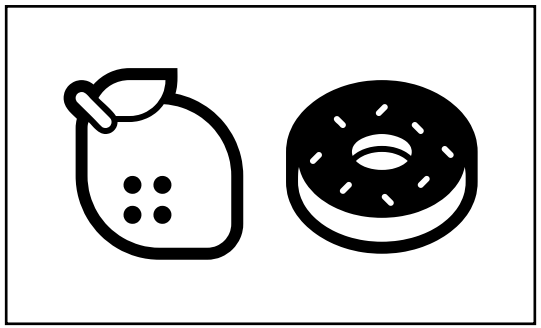


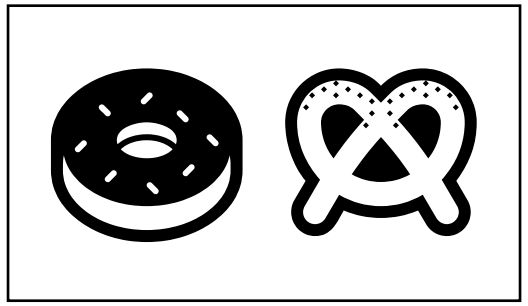
What is returned for this search?

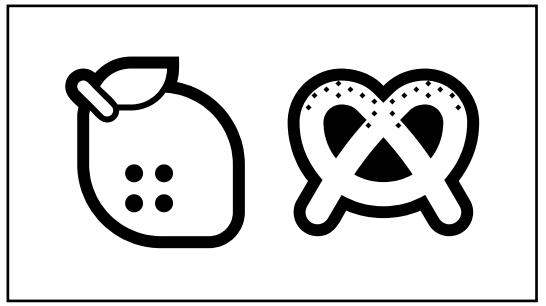
Doughnuts ∪ Lemons

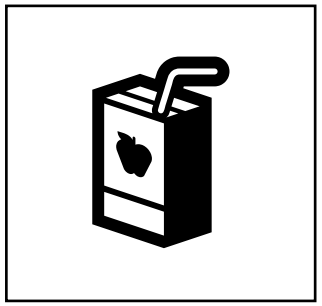








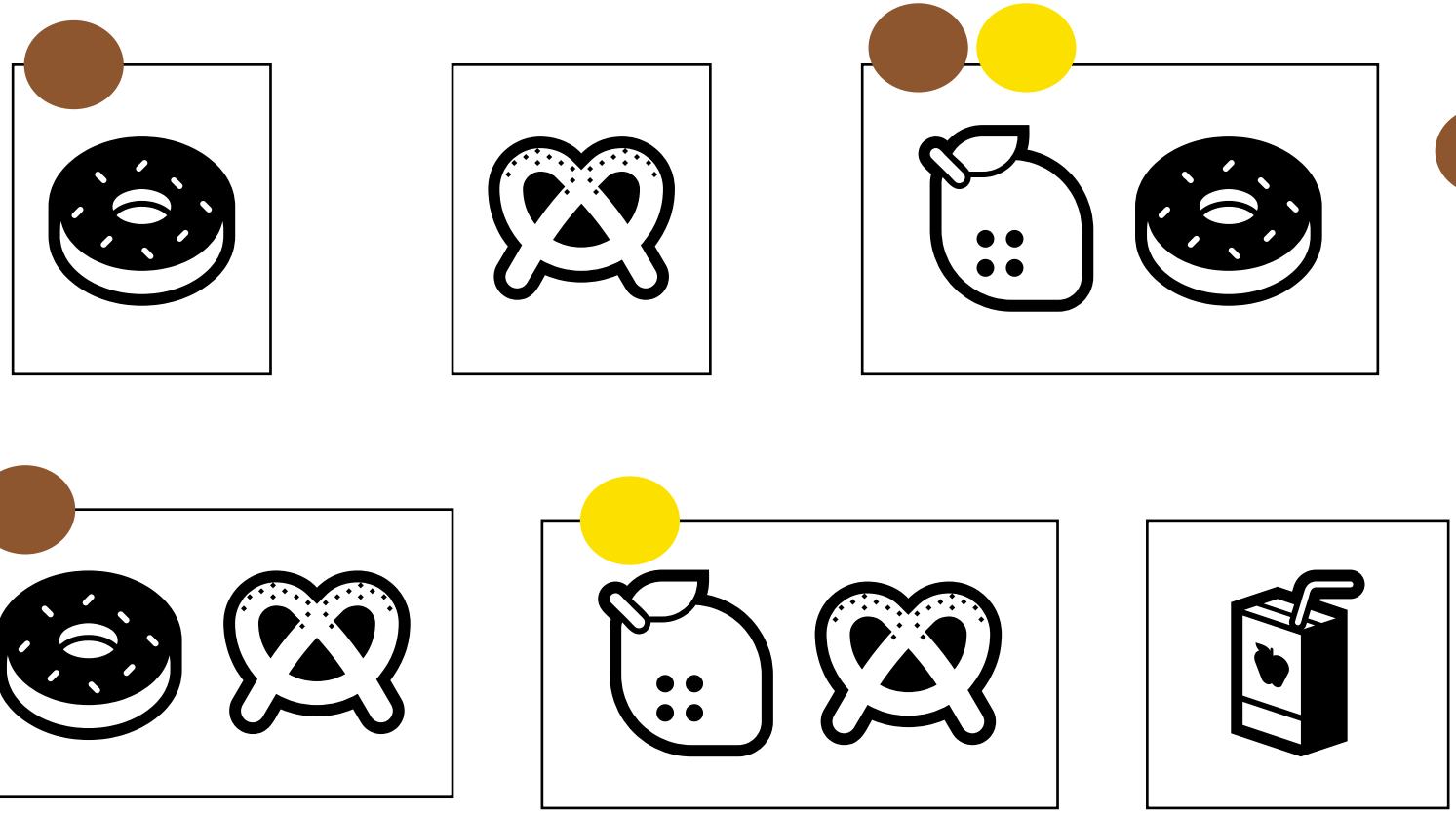




Mark where there are doughnuts. Then lemons.

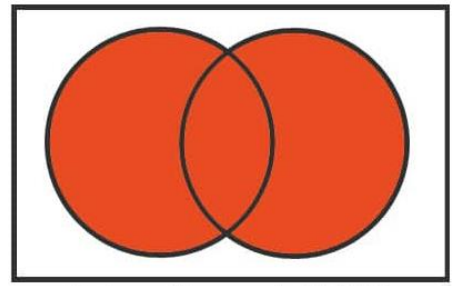
What is returned for this search?

Doughnuts ∪ Lemons

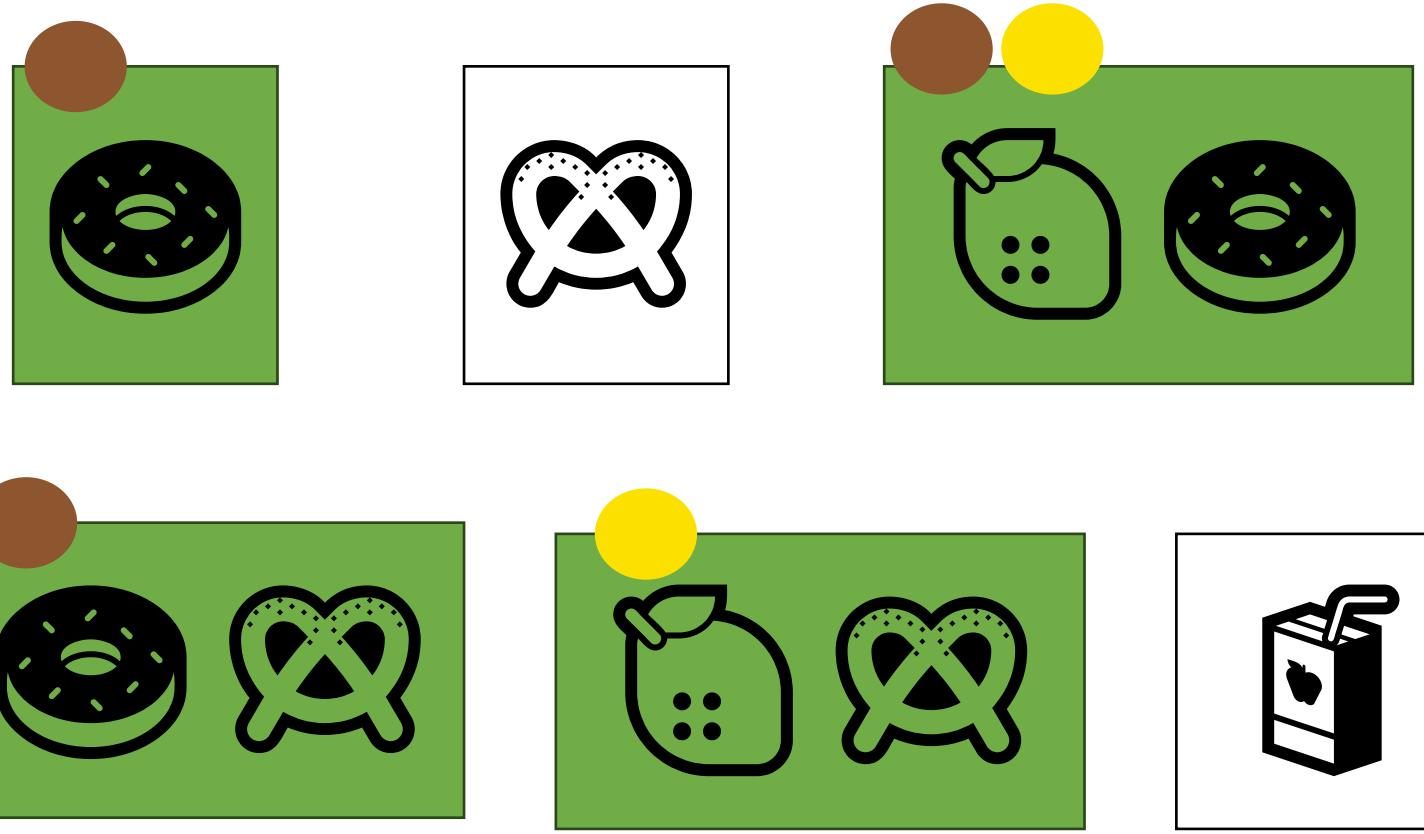


What is returned for this search?

Doughnuts U Lemons



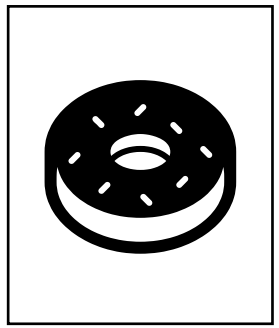
Union of two sets (A U B)

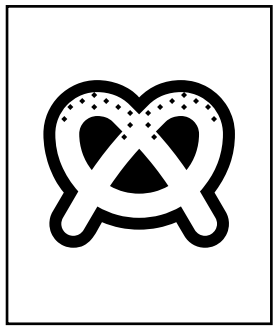


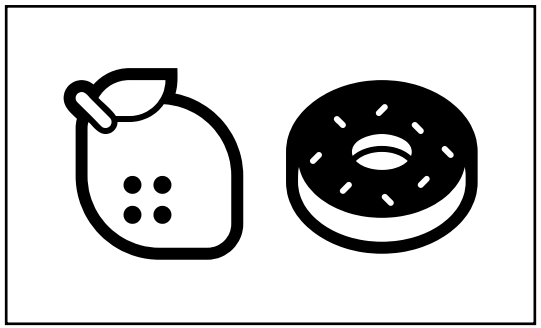
Or means that you colour it if there is at least one dot.

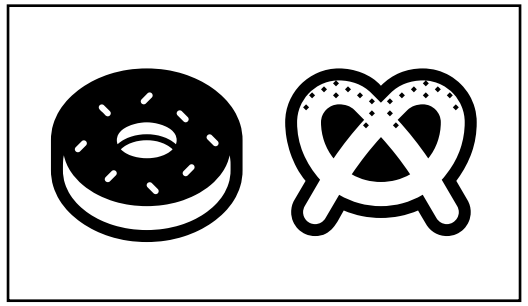
What is returned for this search?

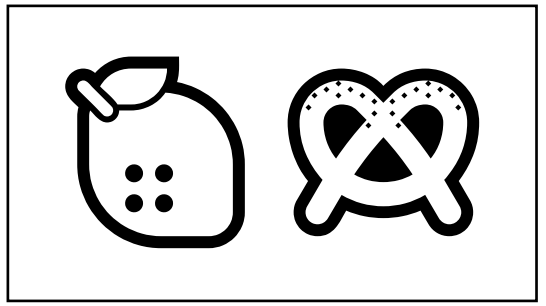
Doughnuts ∩ Lemons

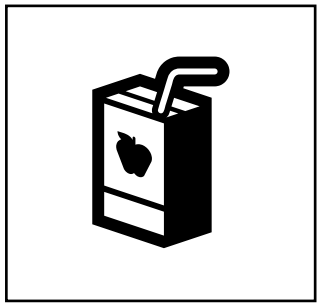








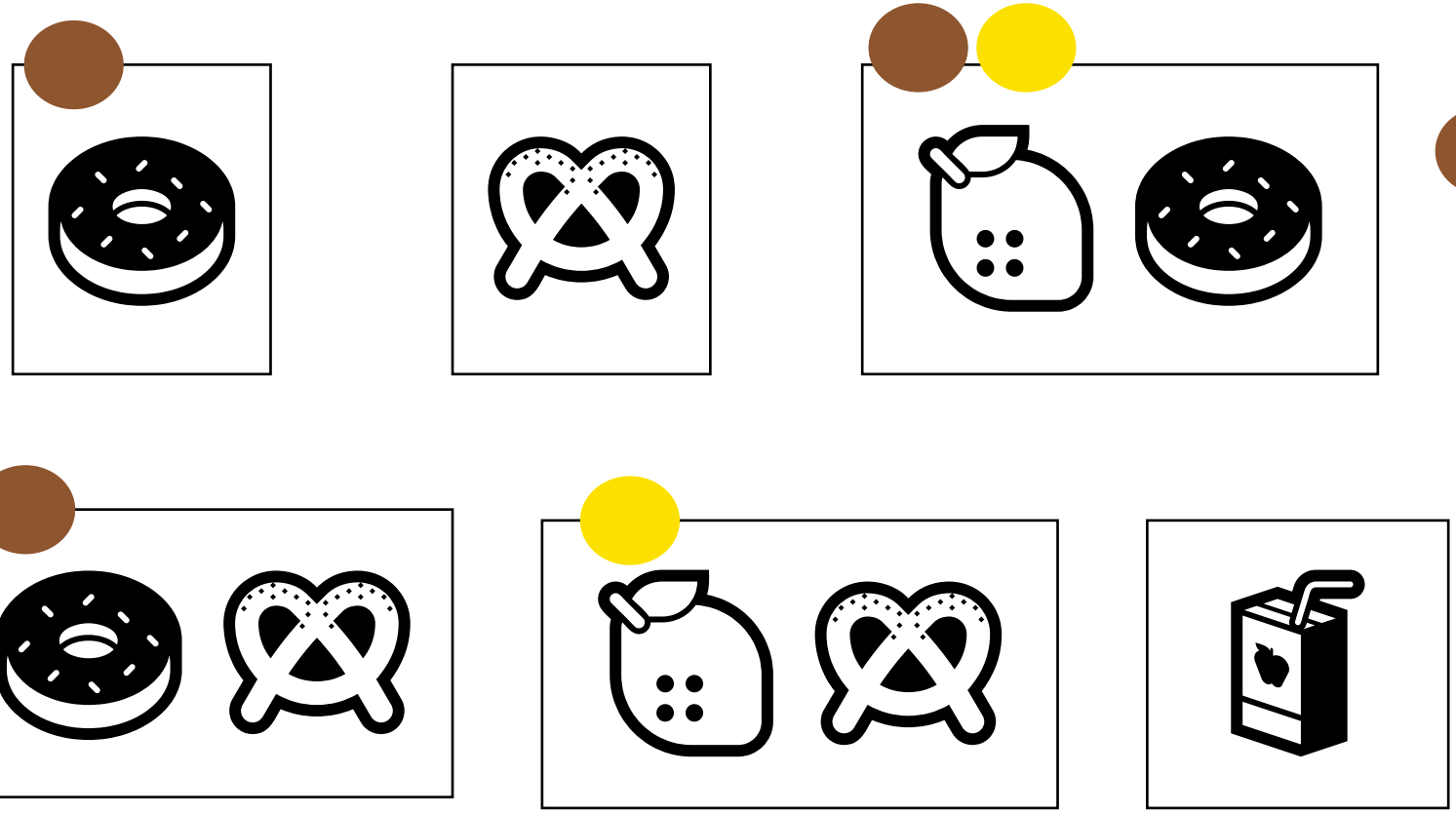




Mark where there are doughnuts. Then lemons.

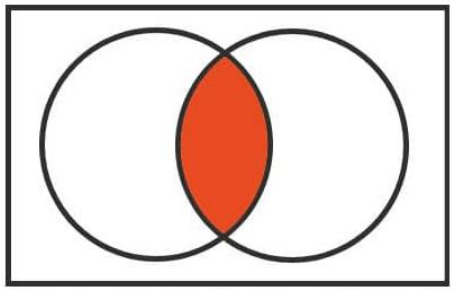
What is returned for this search?

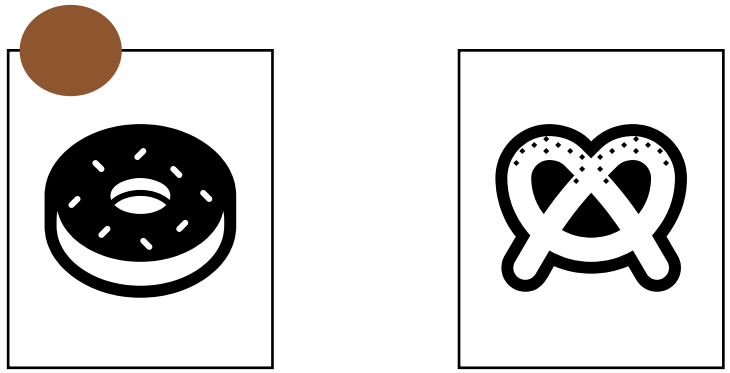
Doughnuts ∩ Lemons

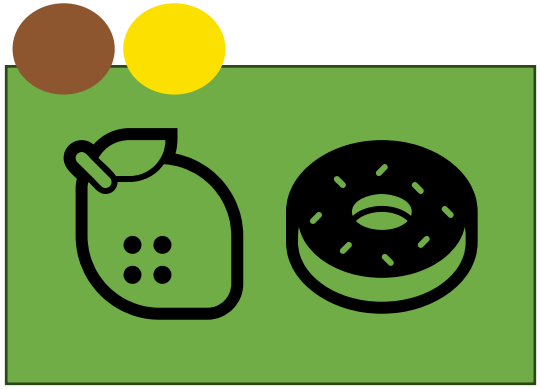


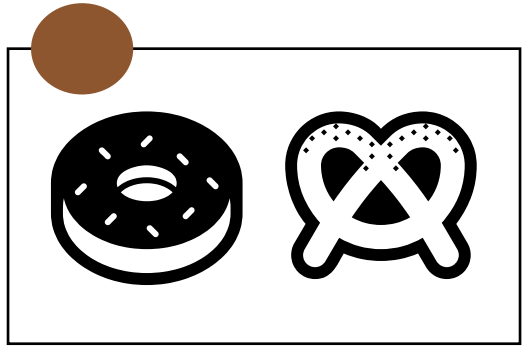
What is returned for this search?

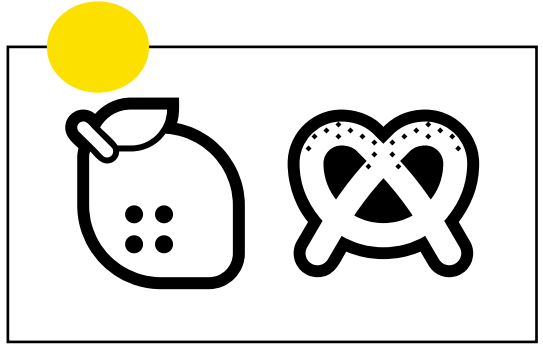
Doughnuts ∩ Lemons

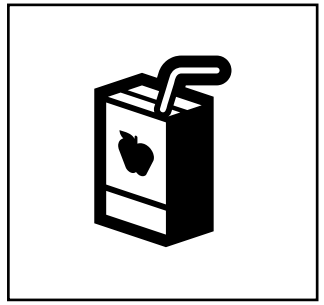








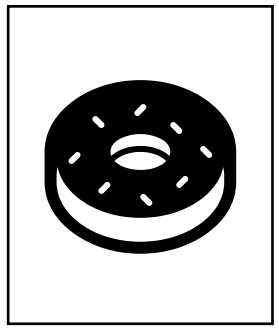


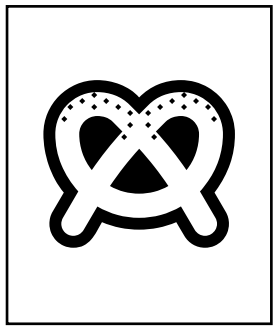


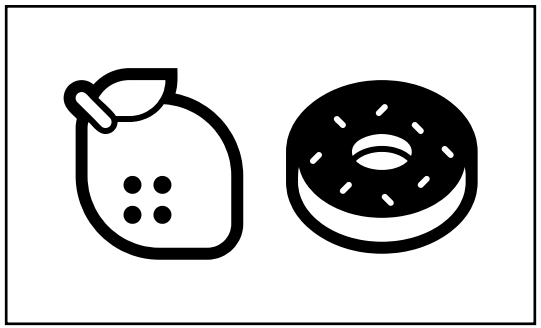
And means that you colour it if there is at least two dots.

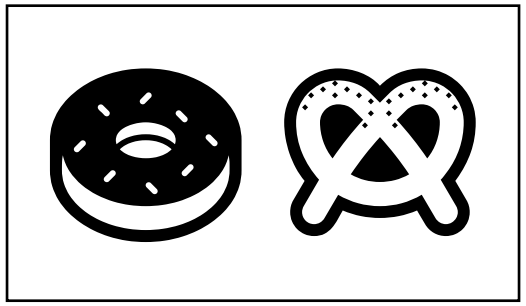
What is returned for this search?

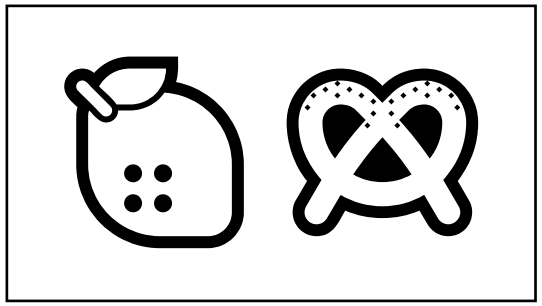
Pretzels' ∩ Lemons'

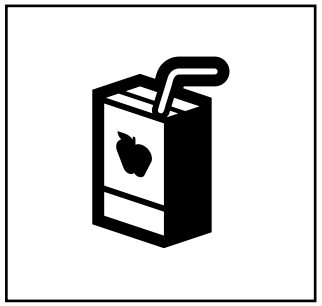








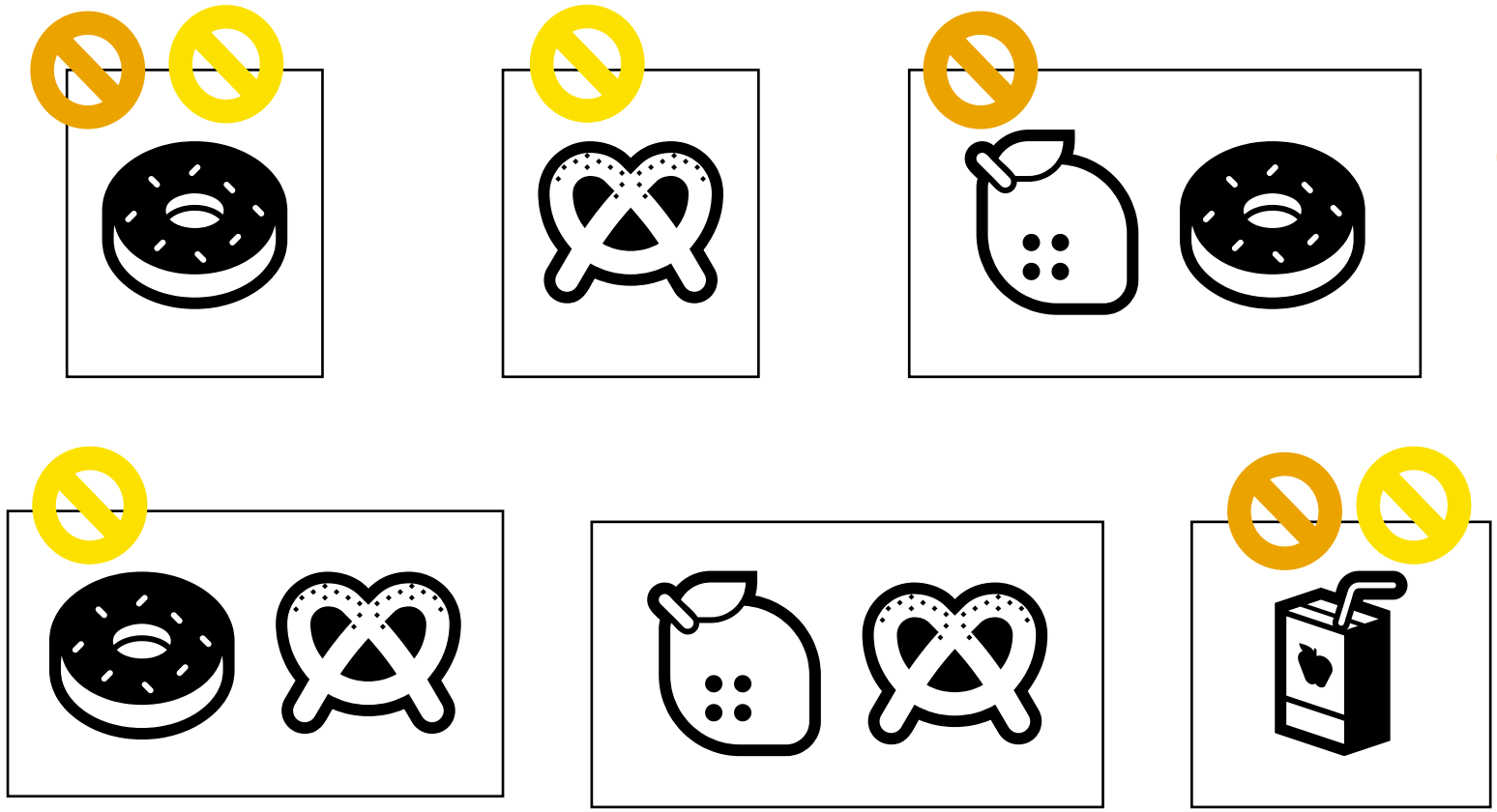




Mark where there are not Pretzels. Then not lemons.

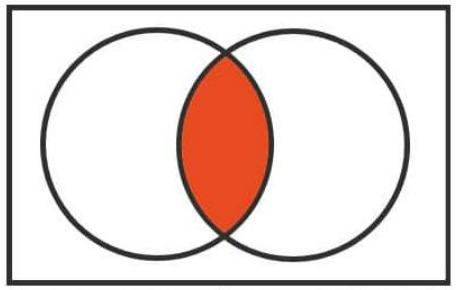
What is returned for this search?

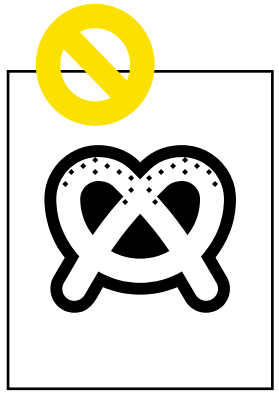
Pretzels' ∩ Lemons'

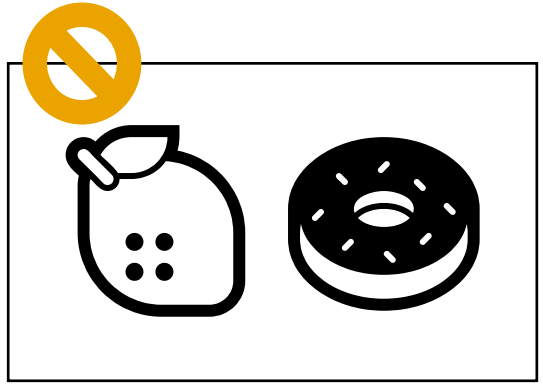


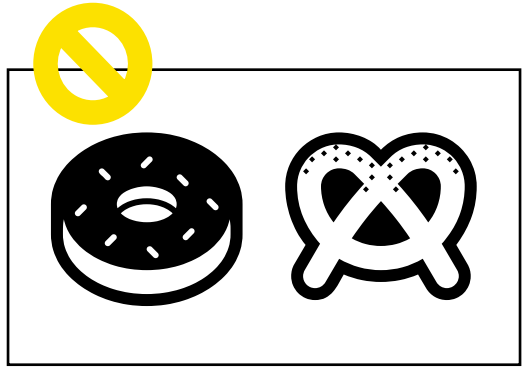
What is returned for this search?

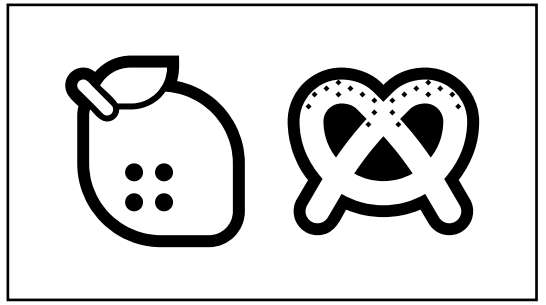
Pretzels' ∩ Lemons'











And means that there are at least two marks.

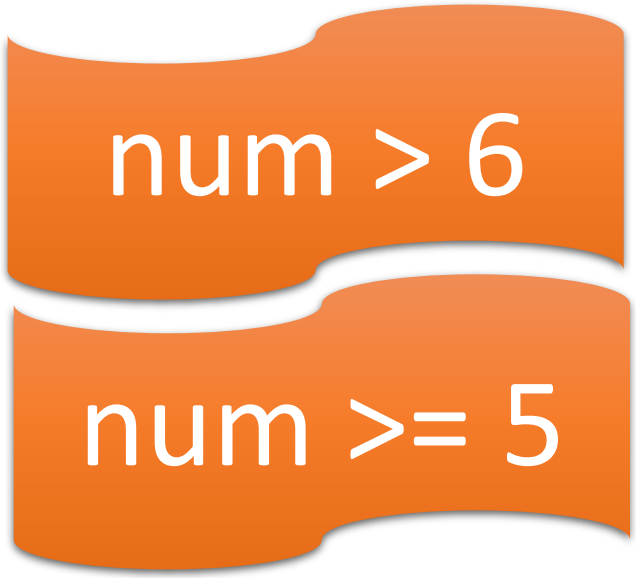
Boolean Algebra evaluates to only two answers.

Relational Operators

Operator	Meaning
>	Greater than
>=	Greater than or equal to
<	Less than
<=	Less than or equal to
=	Equal to
<>	Not equal to

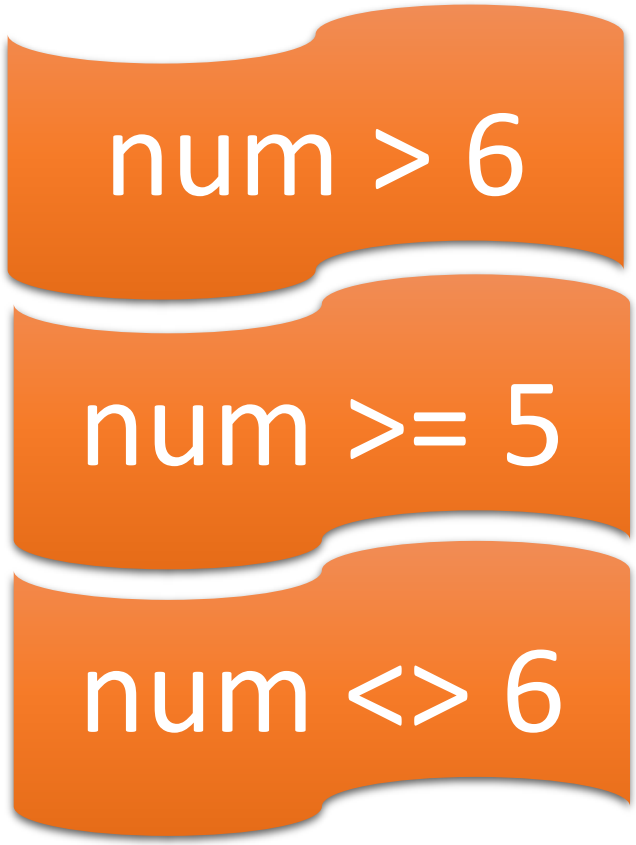
The variable num holds the value of 5.
Are these true or false?

The variable num holds the value of 5.
Are these true or false?



F

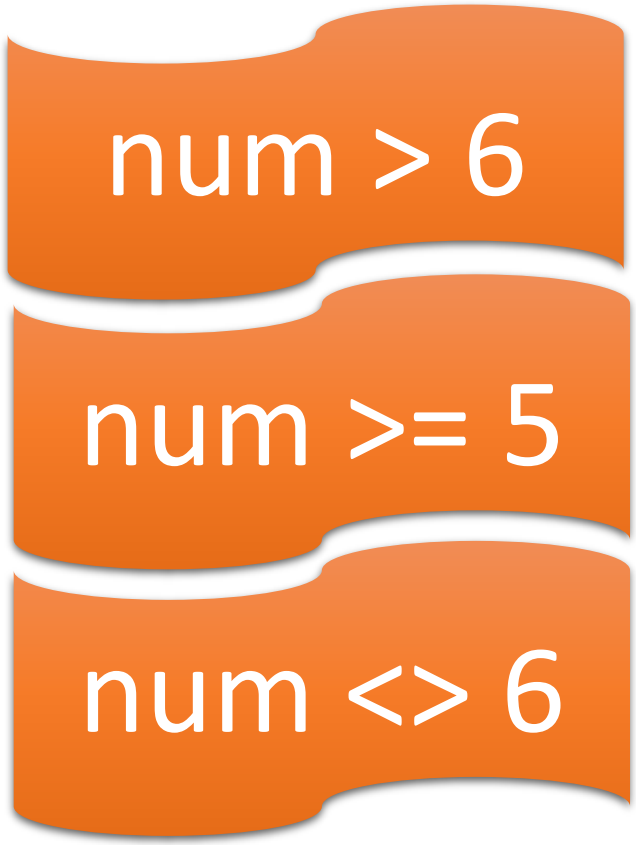
The variable num holds the value of 5.
Are these true or false?



F

T

The variable num holds the value of 5.
Are these true or false?

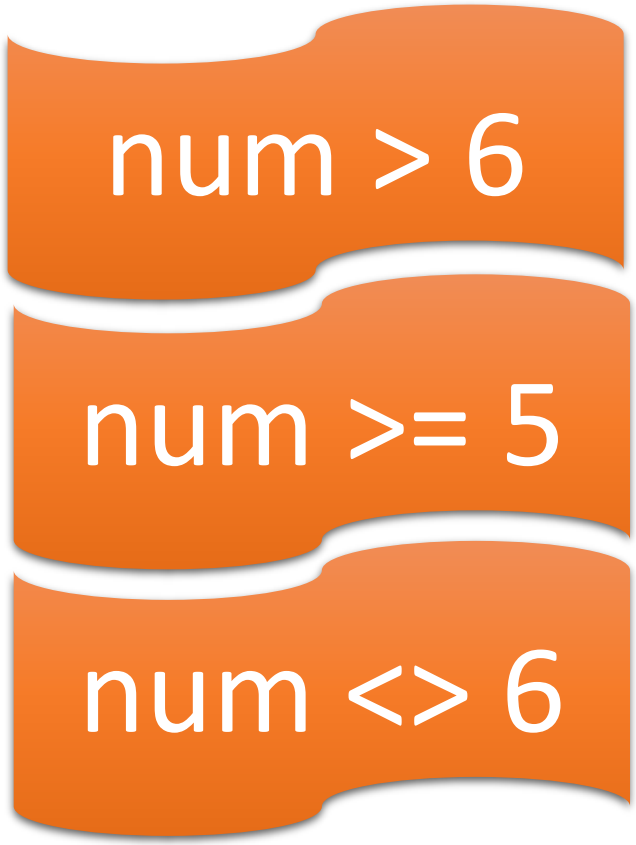


F

T

T

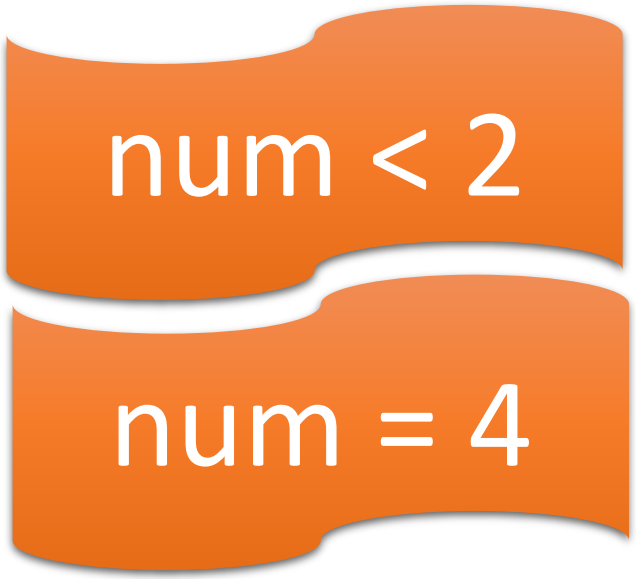
The variable num holds the value of 5.
Are these true or false?



F

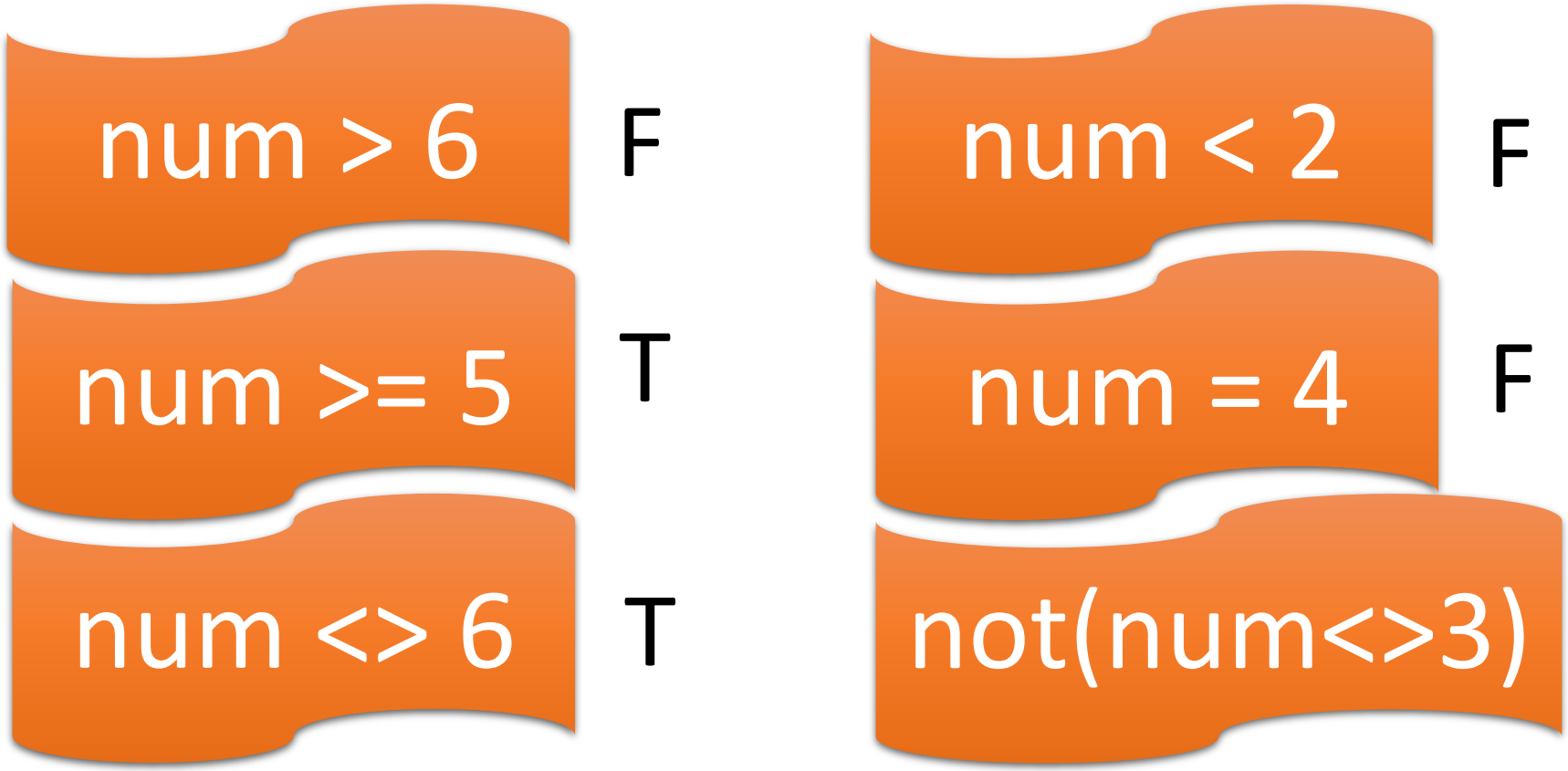
T

T

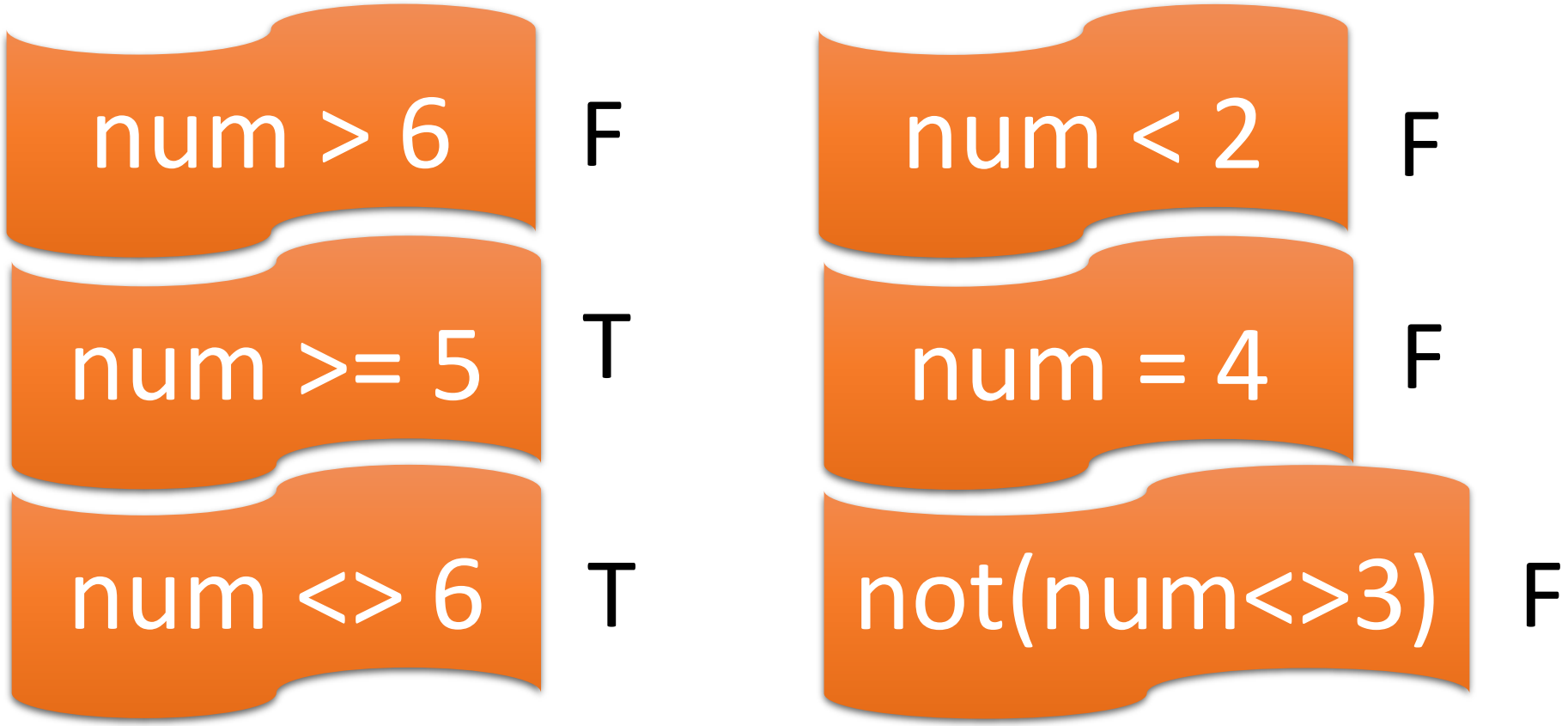


F

The variable num holds the value of 5.
Are these true or false?



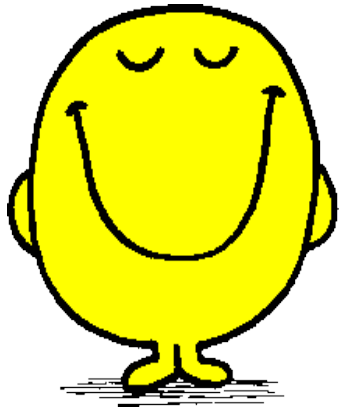
The variable num holds the value of 5.
Are these true or false?



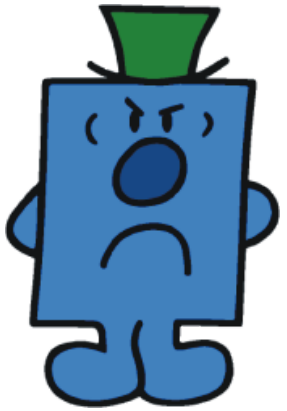

Would you like some cake ∩ ice cream?

Depending on what you give them, the kid is either happy or sad.

True

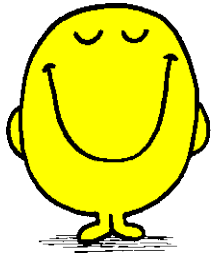


False



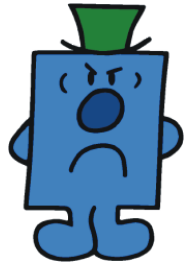
∩

=



∩

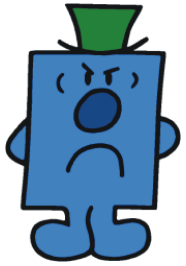
=



Where's my ice cream?

∩

=



Where's my cake?

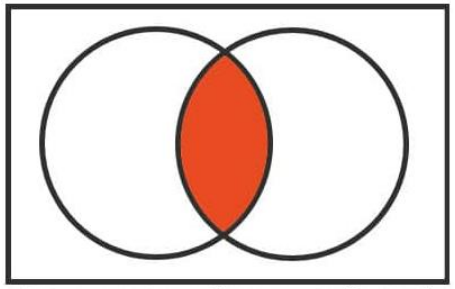
∩

=

Where's my cake and ice cream?

And Truth Table

Val 1		Val 2		Ans
T	∩	T	=	T
T	∩	F	=	F
F	∩	T	=	F
F	∩	F	=	F

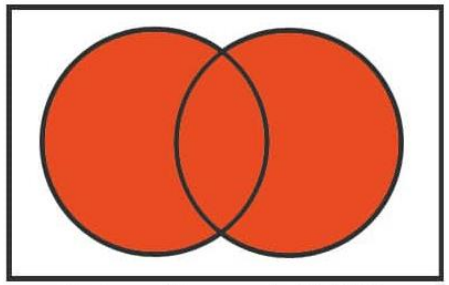


Intersection of two sets (A ∩ B)

And means that there are at least two marks.

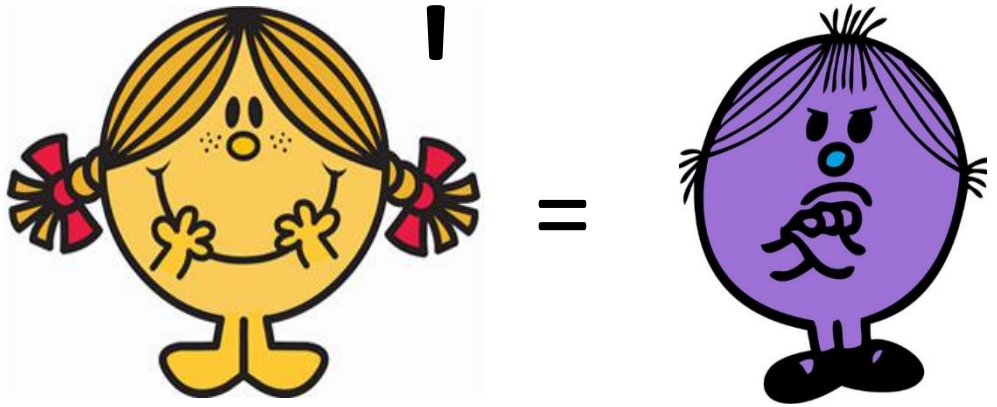
OR Truth Table

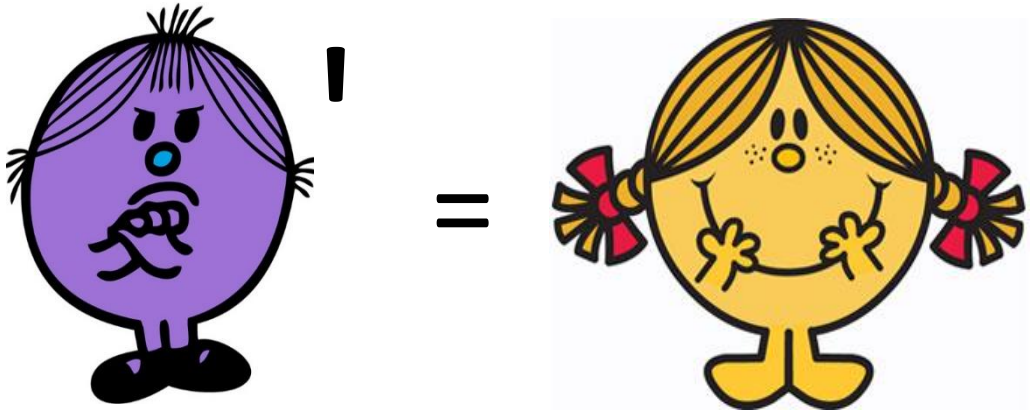
Val 1		Val 2		Ans
T	U	T	=	T
T	U	F	=	T
F	U	T	=	T
F	U	F	=	F



Union of two sets (A U B)

Or means that you colour it if there is at least one dot.





$$P(A') = 1 - \mathrm{P}(\mathrm{A})$$

NOT Truth Table

Value		Answer
T′	=	F
F′	=	T

$$P(A') = 1 - \mathrm{P}(A)$$

	A	B
1	Apple	3
2	Dog	4
3	apple	3
4	APPLE	3.1
5		

1. Look in the cells. Fill in the values.

=NOT (NOT(A3<>A2))

=NOT(NOT(_____<>_____))

=NOT(NOT(_____))

=NOT(_____)

=_____

	A	B
1	Apple	3
2	Dog	4
3	apple	3
4	APPLE	3.1
5		

1. Look in the cells. Fill in the values.

=NOT (NOT(A3<>A2))

=NOT(NOT(apple <> Dog))

=NOT(NOT(_____))

=NOT(_____)

=_____

	A	B
1	Apple	3
2	Dog	4
3	apple	3
4	APPLE	3.1
5		

2. Use BEDMAS. Evaluate the inner most bracket.

=NOT (NOT(A3<>A2))

=NOT(NOT(apple <> Dog))

=NOT(NOT(_____))

=NOT(_____)

=_____

	A	B
1	Apple	3
2	Dog	4
3	apple	3
4	APPLE	3.1
5		

3. Then, do the next inner most bracket.

=NOT (NOT(A3<>A2))

=NOT(NOT(apple <> Dog))

=NOT(NOT(T))

=NOT(_____)

=_____

	A	B
1	Apple	3
2	Dog	4
3	apple	3
4	APPLE	3.1
5		

4. Then the next bracket.

=NOT (NOT(A3<>A2))

=NOT(NOT(apple <> Dog))

=NOT(NOT(T))

=NOT(F)

=

	A	B
1	Apple	3
2	Dog	4
3	apple	3
4	APPLE	3.1
5		

5. You are done!!

=NOT (NOT(A3<>A2))

=NOT(NOT(apple <> Dog))

=NOT(NOT(T))

=NOT(F)

= T