

## Meeting Mr. No and Drawing Conclusions

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Mr. No is a funny man who replies with the *opposite* of every statement that he hears.

Here are some examples of his answers:

Statement	Mr. No's response (Opposite statement)
<b>All</b> children <b>like</b> candy	<b>Some</b> children <b>do not like</b> candy
<b>All</b> balloons <b>are</b> red	<b>Some</b> balloons <b>are not</b> red
<b>All</b> fairy tales <b>have</b> a prince	<b>Some</b> fairy tales <b>do not have</b> a prince

1. Can you predict what Mr. No will respond to each of the following statements?

Statement	Mr. No's response (Opposite statement)
<b>All</b> students <b>like</b> math	
<b>All</b> stars <b>are</b> very far away	
<b>All</b> lemons <b>are</b> sour	

2. How does Mr. No construct the opposite of each of the statements on the previous page?

3. How would Mr. No reply to each of the following statements?

Statement	Mr. No's response (Opposite statement)
<b>Some</b> cats <b>are</b> purple	
<b>Some</b> planets <b>have</b> rings	
<b>Some</b> cars <b>are</b> fast	

As you have discovered, each statement has an opposite. Here are some examples:

Statement	Opposite statement
All ... are...	Some ... are not
Some ... are ...	All ... are not ...

4. How would Mr. No respond to the statement, "There is a boy who likes pizza"? Hint: start your sentence with "There are...".

5. Mr. No tells you a story. As usual, instead of telling how it should be, he tells the exact opposite. Can you rewrite (or retell) the original story?

There are no magic animals living in the enchanted forest.

Some of the baby animals are not friends with each other.

All animals are not powerful.

When there is danger, some animals do not protect the baby animals.

Some of the baby animals do not survive and do not get their magic powers.

6. Mr. Yes is good friends with Mr. No. A typical conversation between Mr. Yes and Mr. No goes something like this:

- Mr. Yes says something
- Mr. No responds
- Mr. Yes can't believe Mr. No, so he repeats what Mr. No said as a question
- Mr. No responds
- Mr. Yes is pleased and says goodbye.

Here is an example:

*Mr. Yes:* Hello! Did you know that all people need to eat?

*Mr. No:* No, some people do not need to eat.

*Mr. Yes:* What? I can't believe it. Some people do not need to eat?

*Mr. No:* No, all people need to eat.

*Mr. Yes:* That's what I said! Goodbye.

(a) Why is Mr. Yes pleased in the end?

Fill in the conversation that Mr. Yes and Mr. No would have if Mr. Yes starts with the statement: "All days in Los Angeles are sunny days." Write it like the example.

*Mr. Yes:* Hello! Did you know all days in Los Angeles are sunny days?

*Mr. No:*

*Mr. Yes:* What? I can't believe it.

*Mr. No:*

*Mr. Yes:* That's what I said! Goodbye.

7. A statement can be either **true** or **false**. If a statement is true, it means the opposite statement is false. If a statement is false, this means that the opposite of the statement is true.

For example, the statement:

“All days in Los Angeles are rainy days.” is a **false** statement.

The opposite statement is:

“Some days in Los Angeles are not rainy days.”

This is a **true** statement.

In addition to writing the opposite, we can come up with an example that proves the statement was false. This is called a **counter-example**.

For example:

“Yesterday, it did not rain in Los Angeles.”

is a **counter-example** to

“All days in Los Angeles are rainy days.”

For each of the statements below, state whether it is **true** or **false**. If it is false, provide the opposite statement and a counter-example. If it is true give supporting evidence of why that is.

(a) “All numbers are even numbers”.

(b) “Some numbers are not whole numbers.”

(c) “Every even number is followed by an odd number.”

(d) “All people own a pet.”

(e) “All houses have a garage.”