

## 2.2 Homework

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Consider the statement: All geese have two legs.

1. Write this statement in “if-then” form.
2. Draw an Euler diagram to represent this statement.
3. Write the converse of the statement.
4. If we assume that the original statement is true, does that mean that the converse is also true?

Consider the following statement: If you are an astronaut, you are not more than six feet tall.

5. What is the conclusion of this statement?
6. Write the converse of the statement.
7. Is the converse true?

Consider the following statement: If two segments have the same length, then they are congruent.

8. Write the converse of this statement.
9. If the converse is true, write a biconditional statement (definition, “if and only if”) for this statement. If the converse is not true, write *not true*.

A definition is a biconditional. The conditional statement and its converse are both true.

Is each statement a good definition? If not, explain why.

10. A cat is an animal with whiskers.
11. A square is a shape with four equal sides and four equal angles.
12. Parallel lines do not intersect.