Two lines are *perpendicular* lines if they intersect to form a right angle.

A *line perpendicular to a plane* is a line that intersects the plane in a point and is perpendicular to every line in the plane that intersects it.
When a conditional statement and its converse are both true, you can write them as a single biconditional statement...

which means it contains the phrase "if and only if."

For example...

If two lines intersect to form a right angle, then they are perpendicular.  true

If two lines are perpendicular, then they intersect to form a right angle.  true

Two lines are perpendicular if and only if they intersect to form a right angle.
Example
Rewrite the biconditional statement as a conditional statement and its converse.

Two lines intersect if and only if their intersection is exactly one point.

If two lines intersect, then their intersection is exactly one point.

If the intersection of two lines is exactly one point, then they intersect.

Example
Rewrite the biconditional statement as a conditional statement and its converse.

Three lines are coplanar if and only if they lie in the same plane.

If three lines are coplanar, then they lie in the same plane.

If three lines lie in the same plane, then they are coplanar.
Example
Consider the following statement:
\[ x = 3 \text{ if and only if } x^2 = 9. \]
a) Is this a biconditional statement? \text{yes}
b) Is the statement true?
\text{counterexample: } x = -3
  \text{False}

Example
Consider the following statement:
\[ x^2 = 4x \text{ if and only if } x = 4. \]
a) Is this a biconditional statement? \text{yes}
b) Is the statement true?
\text{counterexample: } x = 0
  \text{false}
Example
Rewrite the true statement in if-then form and write the converse. If the converse is true, combine it with the if-then statement to form a true biconditional statement. If the converse is false, provide a counterexample.

A number that ends in 0 is divisible by 5.
1) If a number ends in 0, then it is divisible by 5.
2) If a number is divisible by 5, then it ends in 0.

FALSE 15 or 5 or 25

Example
Rewrite the true statement in if-then form and write the converse. If the converse is true, combine it with the if-then statement to form a true biconditional statement. If the converse is false, provide a counterexample.

All leopards have spots.
1) If an animal is a leopard, then it has spots.
2) If an animal has spots, then it is a leopard.

False Counterexample: dalmatian or cheetah