Write the if-then form, the converse, the inverse, and the contrapositive of the given statements. Then decide if the statement is true or false.

1. Basketball players are athletes.
   
   **If Then:** If you are a basketball player, then you are an athlete. True
   
   **Inverse:** If you are not a basketball player, then you are not an athlete. False – football
   
   **Converse:** If you are an athlete, then you are a basketball player. False – Football
   
   **Contrapositive:** If you are not an athlete, then you are not a basketball player. True

2. The midpoint of a segment is a point that divides the segment into two congruent segments.
   
   **If-Then:** If a point is the midpoint, then it divides the segment into 2 congruent segments. True
   
   **Inverse:** If a point is not the midpoint, then it does not divide the segment into 2 congruent segments. True
   
   **Converse:** If a point divides a segment into 2 congruent segments, then it is the midpoint. True
   
   **Contrapositive:** If a point does not divide a segment into 2 congruent segments, then it is not the midpoint. True

3. In an equilateral polygon, all sides are congruent.
   
   **If-Then:** If a polygon is equilateral, then all sides are congruent. True
   
   **Inverse:** If a polygon is not equilateral, then all sides are not congruent. True
   
   **Converse:** If all the sides of a polygon are congruent, then it is equilateral. True
   
   **Contrapositive:** If all the sides of a polygon are not congruent, then it is not equilateral. True

4. When it rains, it pours.
   
   **If-Then:** If it rains, then it pours. False – sprinkle
   
   **Inverse:** If it does not rain, then it does not pour. True
   
   **Converse:** If it pours, then it rains. True
   
   **Contrapositive:** If it does not pour, then it does not rain. False - sprinkle
5. Guitar players are musicians.

   **If-Then:** If you are a guitar player, then you are a musician. True
   **Inverse:** If you are not a guitar player, then you are not a musician. False – piano
   **Converse:** If you are a musician, then you are a guitar player. False – drums
   **Contrapositive:** If you are not a musician, then you are not a guitar player. True

**Write the converse of each statement. If the converse is also true, combine the statements to write a true biconditional statement.**

6. If an angle measures 30°, then it is acute. True
   **Converse:** If an angle is acute, then it’s measure is 30°. False - 45°

7. If two circles have the same diameter, then they have the same circumference. True
   **Converse:** If two circles have the same circumference, then they have the same diameter. True

   **Biconditional:** Two circles have the same diameter if and only if they have the same circumference.

8. If a convex polygon is equilateral and equiangular, then it is regular. True
   **Converse:** If a convex polygon is regular, then it is equilateral and equiangular. True

   **Biconditional:** A convex polygon is equilateral and equiangular if and only if it is regular.

**Grading Scale**

0 incorrect = 10
1-2 incorrect = 9
3-4 incorrect = 8
5-6 incorrect = 7
7-9 incorrect = 6
10-11 incorrect = 5