

Geometry-2.2 Practice

Write the statement in the conditional

1. All mirrors are shiny.

Conditional: If it is a mirror, then it is shiny

2. What goes up must come down.

Conditional: If it goes up, then it must come down

Write the inverse, converse and contrapositive of the conditional.

Determine if each statement is True or False.

3. Conditional: If you grew up in Alaska, then you have seen snow.

False Converse: If you have seen snow, then you grew up in Alaska

False Inverse: If you didn't grow up in Alaska, then you haven't seen snow.

True Contrapositive: If you haven't seen snow, then you didn't grow up in Alaska.

4. Conditional: If $6x = 18$, then $x = 3$.

False Converse: If $x = 3$, then $6x = 18$.

False Inverse: If $6x \neq 18$, then $x \neq 3$

True Contrapositive: If $x \neq 3$, then $6x \neq 18$

5. Conditional: If two lines in a plane never intersect, then they are parallel.

True Converse: If two lines in a plane are parallel, then they never intersect

True Inverse: If two lines in a plane intersect, then they are not parallel.

True Contrapositive: If two lines ~~are~~ in a plane are not parallel, then they intersect.

Rewrite as a bi-conditional statement if both the conditional and converse are true.

6. Conditional: If a shape is a triangle, then it has three sides.

A shape has 3 sides if and only if it is a triangle.

7. Conditional: If two angles are congruent, then they have the same measure.

Two angles are congruent if and only if they have the same measure.

Determine if the statement is true or false. Then write the converse and determine if it is true or false. If it is false, then provide a counterexample.

8. If $x^2 = 4$, then $x = -2$.

• **False**, x could equal positive 2

• Converse: if $x = -2$, then $x^2 = 4$

False if $x = -2$, then ~~there are many possible outcomes~~ $2x = -4$ or $x + 5 = 3$
→ there are many possible outcomes

9. If Pam lives in Chicago, then she lives in Illinois.

• **True**

• Converse: If Pam lives in Illinois, then she lives in Chicago

False Pam could live in Aurora or Rockford or any city in Illinois

10. If $\angle A \cong \angle B$, then $m\angle A = m\angle B$.

• **True**

• Converse: If $m\angle A = m\angle B$, then $\angle A \cong \angle B$

True