Complete:

1)
Given Statement: If p, then q.

Contrapositive: If not _____ , then not _____ .

Converse: If _____ , then _____ .

Inverse: If not _____ , then not _____ .

2) Given: A true conditional.

   a) Must its converse be true?
   b) Must its inverse be true?
   c) Must its contrapositive be true?

Write the contrapositive and inverse of each statement.

3) If $2x + 3 = 9$, then $x = 3$

4) If a polygon has six sides, then it is a hexagon.

5) If $a < 5$, then $a \neq 5$.

6) If a polygon is a triangle, then the sum of the measures of its angles is 180.

Answer Key

1)
Given Statement: If p, then q.

Contrapostive: If not q, then not p.

Converse: If q, then p.

Inverse: If not p, then not q.

2) No, No, Yes

3) If $x \neq 3$, then $2x + 3 \neq 9$;   If $2x + 3 \neq 9$, then $x \neq 3$

4) If a polygon is not a hexagon, then it does not have six sides;   If a polygon does not have six sides, then it is not a hexagon.

5) If $a = 5$, then $a \geq 5$;   If $a \geq 5$, then $a = 5$;

6) If the sum of the measures of the angles of a polygon is not 180, then it is not a triangle;   If a polygon is not a triangle, then the sum of the measures of the angles is not 180.