

5.

Write a concluding statement for each of the following chains of reasoning.

a. $a \Rightarrow b$

$d \Rightarrow \sim c$

$\sim c \Rightarrow a$

$b \Rightarrow f$

b. $p \Rightarrow \sim q$

$r \Rightarrow q$

$s \Rightarrow r$

- c. If weasels walk wisely, the cougars call their cubs.
 If goats go to graze, then horses head for home.
 If cougars call their cubs, then goats go to graze.
 If bobcats begin to browse, then weasels walk wisely.

6.

Write the converse, the inverse, and the contrapositive of the following statement. Determine the truth of each of the new statements.

If M is the midpoint of \overline{AB} , then M, A, and B are collinear.

Converse:

Inverse:

Contra:

7.

Rewrite the following sentence in conditional form and find its converse, inverse, and contrapositive: "A square is a quadrilateral with four congruent sides."

If a polygon is a square, then it is a quadrilateral with four congruent sides.

Converse:

Inverse:

Contra:

9.

What conclusion can be drawn from the following?

$$\sim c \Rightarrow \sim f$$

$$g \Rightarrow b$$

$$p \Rightarrow f$$

$$c \Rightarrow \sim b$$