

If-Then Statements; Converses

For use after Section 2-1

For each statement, state (a) the hypothesis, and (b) the conclusion.

1. If $2x - 8 = 26$, then $x = 17$.

a. hypothesis: _____

b. conclusion: _____

2. The grass is wet if it is raining.

a. hypothesis: _____

b. conclusion: _____

Write the converse of each statement and state whether the converse is true or false.

3. If \overrightarrow{RA} bisects $\angle SRT$, then $m\angle SRA = m\angle ART$.

Converse: _____

4. A number is divisible by 5 if it is divisible by 10.

Converse: _____

Tell whether the statement is true or false. Then write the converse and state whether it is true or false.

5. If $x^2 > 64$, then $x > 8$. _____

Converse: _____

6. If $m\angle 1 = 135$, then $\angle 1$ is obtuse. _____

Converse: _____

Rewrite each biconditional as two conditionals that are converses of each other.

7. $(x - 1)(x + 8) = 0$ if and only if $x = 1$ or $x = -8$._____

8. The measures of two angles are equal if and only if the angles are congruent.

_____9. Provide a counterexample to show that the statement is false:
If three points are coplanar, then they are collinear.

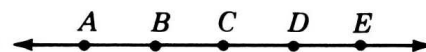
Properties from Algebra

For use after Section 2-2

Justify each statement with a property from algebra.

1. If $6x - 7 = 29$, then $6x = 36$. _____
2. If $6x = 36$, then $x = 6$. _____
3. If $\frac{x}{9} = 2$, then $x = 18$. _____
4. If $3x + 5 = -22$, then $3x = -27$. _____
5. If $3x = -27$, then $x = -9$. _____
6. $3(x + y) = 3x + 3y$ _____
7. If $m\angle A = m\angle B$ and $m\angle B = m\angle C$, then $m\angle A = m\angle C$. _____
8. If $2(x + 1) = 8$, then $8 = 2(x + 1)$. _____

9. If $AB = CD$, then $AC = BD$.

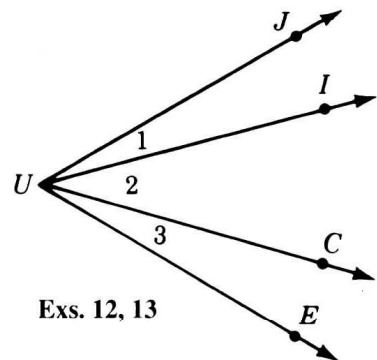


Exs. 9-11

10. If $AB = BC$ and $BC = CD$, then $AB = CD$. _____

11. If $AC = BD$, then $AB = CD$. _____

12. If $m\angle JUC = m\angle IUE$, then $m\angle JUI = m\angle CUE$.

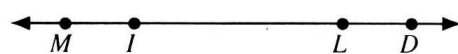


Exs. 12, 13

13. If $m\angle 1 = m\angle 3$, then $m\angle JUC = m\angle IUE$.

Supply the missing reasons in the proof.

14. Given: $MI = LD$
 Prove: $ML = ID$



Proof:

Statements	Reasons
1. $MI = LD$	1. _____
2. $IL = IL$	2. _____
3. $MI + IL = LD + IL$	3. _____
4. $MI + IL = ML$; $LD + IL = ID$	4. _____
5. $ML = ID$	5. _____