

1. If $\frac{3x-7}{H} = 32$, then $\frac{x}{C} = 13$. 3. $\frac{I'll\ try}{C}$ if $\frac{you\ will.}{H}$.

5. $\frac{a+b}{H} = a$ implies $\frac{b}{C} = 0$.

7. Biconditional Statement: B is between A and C if and only if $AB+BC = AC$.

9. 2 statements: ① If points are collinear, then they all lie on 1 line.
 ② If points all lie on 1 line, then they are collinear.


11. If $\frac{ab}{H} < 0$, then $\frac{a}{C} < 0$. **False**

Answers can vary. Hyp True Conclusion False
 CE: $\boxed{a=5, b=-1}$ $(5)(-1) < 0$ but $5 > 0$.

12. If $\frac{n^2}{H} = 5n$, then $\frac{n}{C} = 5$. **False**

Solve $n^2 = 5n$.
 $n^2 - 5n = 0$ CE: $\boxed{n=0}$ $(0)^2 = 5(0)$ but $0 \neq 5$.
 $n(n-5) = 0$ Hyp True Conclusion: False
 $n = 0$ or 5

13. If point G is on \overrightarrow{AB} , then G is on \overrightarrow{BA} . **False**

CE:  Hyp True Conclusion: False
 G is on \overrightarrow{AB} but G is not on \overrightarrow{BA} .

17. OS: If $\frac{x}{H} = -6$, then $\frac{|x|}{C} = 6$. **True**

CS: If $\frac{|x|}{H} = 6$, then $\frac{x}{C} = -6$. **False**

Solve $|x| = 6$. CE: $x = 6$ $|6| = 6$ but $6 \neq -6$.
 $x = \pm 6$ Hyp True Conc. False

No biconditional statement because both the OS and CS must be true.

18. OS: If $\frac{x^2}{H} = 4$, then $\frac{x}{C} = -2$. **False**

Solve $x^2 = 4$ CE: $x = 2$ $(2)^2 = 4$ but $2 \neq -2$.
 $x = \pm 2$ Hyp True Conc. False

CS: If $x = -2$, then $x^2 = 4$. **True**.

$(-2)^2 = 4 \checkmark$

No biconditional statement

Key

22. OS: IF $\angle A \cong \angle B$, then $m\angle A = m\angle B$. True
This is the definition of congruent angles!

A biconditional statement can be written because both the OS and CS are true.

CS: IF $m\angle A = m\angle B$, then $\angle A \cong \angle B$. True
This is also the definition of congruent angles!

$\angle A \cong \angle B$ if and only if $m\angle A = m\angle B$.

*Note that definitions are always biconditional!

23. OS: $\underline{a^2 > 9}$ if $\underline{a > 3}$. True
 $a > 3$ will always make $a^2 > 9$.

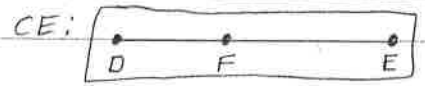
The biconditional statement

CS: $\underline{a > 3}$ if $\underline{a^2 > 9}$. False
solve $a^2 > 9$.
 $a > 3$ or $a < -3$

CE: $\boxed{a = -5}$ $(-5)^2 > 9$ but $-5 < 3$.
Hyp T Conc. False

27. OS: IF points D, E, and F are collinear, then $\underline{DE + EF = DF}$. False

No biconditional statement



D, E, and F are collinear but $\underline{DE + EF \neq DF}$.
Hyp True Conc. False

CS: IF $\underline{DE + EF = DF}$, then points D, E, and F are collinear. True

For the hyp to be true, E must be between D and F. "Between" means on the line segment.



29. Definition of congruent angle: Two angles are congruent if and only if their measures are equal.

30. Definition of right angle: An angle is a right angle if and only if its measure is 90° .