

Match each statement with the appropriate property of equality.

- | | |
|---|----------------------------|
| 1) If $a = b$ and $c \neq 0$, then $\frac{a}{c} = \frac{b}{c}$. | a) Addition Property |
| 2) If $a = b$, then $a + c = b + c$. | b) Subtraction Property |
| 3) If $a = b$, then $b = a$. | c) Multiplication Property |
| 4) If $a = b$, then $a \cdot c = b \cdot c$. | d) Division Property |
| 5) If $a = b$, then $a - c = b - c$. | e) Reflexive Property |
| 6) $a = a$ | f) Symmetric Property |
| 7) If $a = b$ and $b = c$, then $a = c$. | g) Transitive Property |

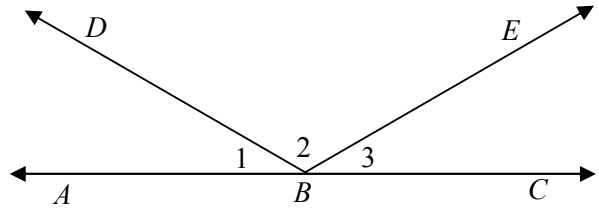
Justify each statement with a property from algebra or definition or postulate from geometry.

- 8) If $AB = CD$ and $BC = BC$, then $AB + BC = CD + BC$
- 9) If $3m\angle 1 = 93$ then $m\angle 1 = 31$
- 10) $\overline{BC} \cong \overline{BC}$
- 11) If point A is on the interior of $\angle XOY$, then $m\angle XOA + m\angle AOY = m\angle XOY$
- 12) If $m\angle 1 = m\angle 3$ and $m\angle 2 = m\angle 3$, then $m\angle 1 = m\angle 2$.
- 13) If $\overline{AB} \cong \overline{CD}$ and $\overline{CD} \cong \overline{EF}$, then $\overline{AB} \cong \overline{EF}$.

14) Complete the proof.

Given: $m\angle 1 = m\angle 3$

Prove: $m\angle ABE = m\angle DBC$

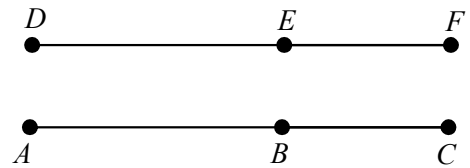


1. $m\angle 1 = m\angle 3$
2. $m\angle 2 = m\angle 2$
3. $m\angle 1 + m\angle 2 = m\angle 3 + m\angle 2$
4. $m\angle ABE = m\angle 1 + m\angle 2$
 $m\angle DBC = m\angle 2 + m\angle 3$
5. $m\angle ABE = m\angle DBC$

15) Complete the proof.

Given: $AB = DE, EF = BC$

Prove: $AC = DF$



1. _____
2. $AB + BC = DE + EF$
3. $AB + BC = AC; DE + EF$
4. $AC = DF$

Given

Answer Key

- 1) D
- 2) A
- 3) F
- 4) C
- 5) B
- 6) E
- 7) G
- 8) Addition Property of =
- 9) Division Property of =
- 10) Reflexive
- 11) Angle Addition Postulate
- 12) Substitution
- 13) Transitive Property of congruence
- 14) Given, Reflexive, Addition Prop. of =, Angle Addition Postulate, Substitution
- 15) $AB=DE$ & $EF=BC$, Addition Prop of =, Segment Addition Postulate, Substitution