

Geometry w/ Applications
2.4 Practice Sheet

Name _____

Match the statement with the Property of Equality.

- | | |
|--|----------------------------|
| 1. If $JK = PQ$ and $PQ = ST$, then $JK = ST$. | A. Addition property |
| 2. If $m\angle S = 30^\circ$, then $5^\circ + m\angle S = 35^\circ$. | B. Reflexive property |
| 3. If $AB + CD = EF + CD$, then $AB = EF$. | C. Substitution property |
| 4. $AB = AB$ | D. Transitive property |
| 5. If $x = 4$ and $y = x + 5$, then $y = 9$. | E. Symmetric property |
| 6. If $m\angle K = 45^\circ$, then $3(m\angle K) = 135^\circ$. | F. Multiplication property |
| 7. If $m\angle P = m\angle Q$, then $m\angle Q = m\angle P$. | G. Subtraction property |

Use the property to complete the statement.

8. Addition property of equality: If $AB = 5$, then $10 + AB = \underline{\quad ? \quad}$.
9. Multiplication property of equality: If $m\angle C = 30^\circ$, then $\underline{\quad ? \quad} (m\angle C) = 15^\circ$.
10. Reflexive property of equality: $AF = \underline{\quad ? \quad}$.
11. Symmetric property of equality: If $m\angle DCF = m\angle MJC$, then $\underline{\quad ? \quad}$.
12. Transitive property of equality: If $YZ = DB$ and $\underline{\quad ? \quad} = JK$, then $\underline{\quad ? \quad}$.
13. Substitution property of equality: If $MN = 3$, then $5(MN) = \underline{\quad ? \quad}$.

Complete the argument, giving a reason for each step.

- | | | |
|----|----------------------|-------|
| 1. | $3(2x - 4) = 5x + 2$ | Given |
| | $6x - 12 = 5x + 2$ | _____ |
| | $x - 12 = 2$ | _____ |
| | $x = 14$ | _____ |

Complete the argument, giving a reason for each step. (cont.)

2.

$$4x + 8 = 2x - 12$$

$$2x + 8 = -12$$

$$2x = -20$$

$$x = -10$$

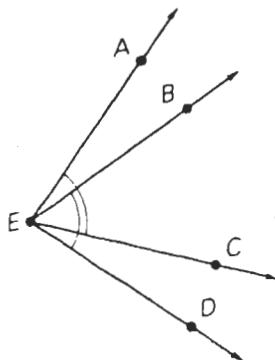
Given

3. $m\angle AEB + m\angle BEC = m\angle CED + m\angle BEC$

$$m\angle BEC = m\angle BEC$$

$$m\angle AEB = m\angle CED$$

Given



4.

$$AB = BC$$

$$AC = AB + BC$$

$$AC = AB + AB$$

$$AC = 2(AB)$$

Given



5. $m\angle AEB = m\angle CED$

$$m\angle BEC = m\angle BEC$$

$$m\angle AEB + m\angle BEC = m\angle CED + m\angle BEC$$

$$m\angle AEC = m\angle AEB + m\angle BEC$$

$$m\angle BED = m\angle CED + m\angle BEC$$

$$m\angle AEC = m\angle BED$$

Given

