9.

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| --- | --- |
| Statements | Reasons |
| 1.
 | 1. Given
 |
| 1.
 | 2. Transitive Property of Congruence |

|  |  |
| --- | --- |
| Statements | Reasons |
| 1.
 | 1. Given
 |
| 1.
 | 2. Definition of Congruent Segments |
| 1. Y, W, V and V, X, Z are collinear
 | 3. Assumed by Diagram |
| 1. WY + VW = VY

XZ + VX = VZ | 4. Segment Addition Postulate |
| 1. XZ + VX = WY + VW
 | 5. Substitution Property |
| 1. WY + VX = WY + VW
 | 6. Substitution Property |
| 1. VX = VW
 | 7. Subtraction Property |
| 1. VW = VX
 | 8. Symmetric Property |
| 1.
 | 9. Definition of Congruent Segments |

10.



11.

|  |  |
| --- | --- |
| Statements | Reasons |
| 1.
 | 1. Given
 |
| 1.
 | 2. If a point is a **midpoint** of a segment, then it divides the segment into two congruent segments. |
| 1.
 | 3. Definition of Congruent Segments |
| 1. C,D,E,F,G Z are collinear
 | 4. Assumed by Diagram |
| 1. CD + DE = CE

FG+ EF = EG | 5. Segment Addition Property |
| 1. FG + EF = CE
 | 6. Substitution Property |
| 1. CE = EG
 | 7. Substitution Property |
| 1.
 | 8. Definition of Congruent Segments |



12.

|  |  |
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| Statements | Reasons |
| 1.
 | 1. Given
 |
| 1.
 | 2. If a point is a **midpoint** of a segment, then it divides the segment into two congruent segments. |
| 1.
 | 3. Definition of Congruent Segments |
| 1. 4. A, B, C, D, E are collinear
 | 4. Assumed by Diagram |
| 1. AB + BC + CD + DE = AE
 | 5. Segment Addition Property |
| 1. AB + AB + DE + AB = AE
 | 6. Substitution Property |
| 1. AB + AB + AB + AB = AE
 | 7. Substitution Property |
| 1. 4 AB = AE
 | 8. Combine Like Terms |
| 1. AE= 4AB
 | 9. Symmetric Property |

