**Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour \_\_\_\_\_\_\_\_\_**

**Standard 6A Proofs about Lines & Angles and Standard 6B Proofs about Parallel Lines & Transversals Review**

**A.** Complementary Angles

**B.**  Congruent

**C.** Midpoint

**D.** Supplementary Angles

**E.** Angle Bisector

**F.** Linear Pair

**G.** Segment Addition Postulate

**H.** Transitive Property

**I.** Symmetric Property

**J.** Reflexive Property

**K.** Same Side Interior Angles

**L.** Vertical Angles

**M.** Angle Addition Postulate

**N.** Alternate Interior Angles

**O.** Alternate Exterior Angles

**P.** Corresponding Angles

**1-14. Fill in the blank with the correct vocab word.**

**1.** A point that divides a segment into to two congruent pieces:\_\_\_\_\_\_\_

**2.** Two angles that are adjacent and supplementary: \_\_\_\_\_\_\_

**3.**  If a = b and b = c, then a = c \_\_\_\_\_\_\_

**4.**  A ray that divides an angle into two congruent angles: \_\_\_\_\_\_\_

**5.** The larger segment is equal to the sum of the segments that comprise it. \_\_\_\_\_\_\_

**6.** A pair of angles that sum to 90 degrees: \_\_\_\_\_\_\_

**7.** Using **Figure 1**, ≅ because they are \_\_\_\_\_\_\_

**8.** Using **Figure 1**,  because they are \_\_\_\_\_\_\_

**9.** Using **Figure 1**, ≅ because they are \_\_\_\_\_\_\_

**10.** Using **Figure 1**, ≅ because they are \_\_\_\_\_\_\_

**11.** Using **Figure 1**,  because they are \_\_\_\_\_\_\_

**12.** Using **Figure 1**,  because they are \_\_\_\_\_\_\_

**13.** If a transversal intersects two parallel lines, the same side interior angles are \_\_\_\_

**14.** Vertical angles are \_\_\_\_\_\_\_

**15. Solve for x 16. Given K is a midpoint Solve for x**

****

**17. Solve for x**  **18. Solve for x**

**19-27. Prove the following using the given statements and reasons.**

**Given:** JK = 5x + 1

12

x + 5

**Prove:** x = 4

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| **19.**  | Given |
| **20.** | Segment Addition Postulate |
| 12 + x + 5 = 5x +1 | **21.**  |
| **22.**  | Substitution Property  |
| $$17=4x+1$$ | **23.** |
| **24.**  | Subtraction Property of Equality |
| **25.**  | **26.**  |
| x = 4 | **27.**  |

**Possible Statements: Possible Reasons:**

 $16=4x$ Substitution Property

 $17+x=5x+1$ Segment Addition Postulate

  Symmetric Property of Equality

  Subtraction Property of Equality

 $7+x=5x+1$ Division Property of Equality

 $JK=5x+1$ Addition Property of Equality

 Given



**28-31.** **Prove the following using the given statements and reasons**

 Given: $∠2≅28°$ and $∠2≅∠4$

 Prove: $∠7≅28°$

|  |  |
| --- | --- |
| **Statements** | **Reasons** |
| **28.** | Given |
| $$∠7≅∠4$$ | **29.**  |
| **30.** | Transitive Property of Congruence |
| $$∠7≅28°$$ | **31.**  |

**Possible Statements: Possible Reasons:**

 $∠7≅∠2$ Angle Addition Postulate

 $∠3≅∠6$ Definition of a linear pair

 $∠2≅28°$ and $∠2≅4$ Substitution Property

 $∠7+∠6+∠5≅180°$ Vertical Angles are Congruent

$∠4≅∠7$ Transitive Property of Congruence

**What value of x makes u || v?**

******32. 33. 34.**



**Complete the proof below for 22-27.**

 Given: 

 

 Prove: 

|  |  |
| --- | --- |
| Statement | Reason |
| **35.**  |  Given |
|   | **36.**  |
| **37.**  |  Transitive Property |
|   | **38.**  |
| **39.**  | Transitive Property |
|   | **40.**  |

**Possible Statements: Possible Reasons:**

|  |  |
| --- | --- |
| *
*
*
*
 | * Converse of Corresponding Angles Theorem
* Given
* Definition of a Linear Pair
* Vertical Angles are Congruent
* Transitive Property
* Converse of Alternate Interior Angles Theorem
 |

**41-51. Fill in the blanks with the correct responses from the list of possibilities.**

|  |  |
| --- | --- |
| Statement | Reason |
|    | **41.**  |
|   | **42.**  |
|   are Corresponding Angles | **43.**  |
|    | **44.**  |

 **Possible Reasons:**

* + Vertical angles are congruent
	+ Substitution property of equality
	+ Given
	+ Transitive Property of Congruence
	+ If ll lines, Alternate Interior Angles are congruent
	+ Definition of Corresponding Angles
	+ If Corresponding Angles are congruent then the lines are parallel

Given: , , 

Prove: 

|  |  |
| --- | --- |
| Statement | Reason |
|   ,  ,   | **45.** |
|    | **46.**  |
| **47**.  |  Substitution property of equality |
|   | **48.** |
| **49** |  Subtraction property of equality |
| **50.** |  Division property of equality |
| **51.**  |  Symmetric property of equality |

**Statements: Reasons:**

  Vertical angles are congruent

  Substitution property of equality

  Given

  Addition property of equality

  If ll lines, Same Side Interior Angles are Supplementary

 Subtraction property of equality