Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2.4 Notes

### Algebraic Properties of Equality

|  |  |  |
| --- | --- | --- |
| **Property** | **Symbolically** | **What it Means** |
| Addition Property of Equality | If a = b then | You can |
| Subtraction Property of Equality | If a = b then | You can |
| Multiplication Property of Equality | If a = b then | You can |
| Division Property of Equality | If a = b then | You can |
| Substitution Property of Equality | If a = b then | |

**Solve 2x – 5 = 13. Justify each step.**

2x – 5 = 13 Given

|  |  |  |
| --- | --- | --- |
| **Property** | **Symbolically** | **What it Means** |
| Distributive Property | a(b + c) =  a(b – c) = |  |

**Solve 2(x + 1) = -4. Justify each step.**

2(x + 1) = -4 Given

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Real Numbers** | **Segment Lengths** | **Angle Measures** |
| Reflexive Property | a = a | AB = AB | m∠A = m∠A |
| Symmetric Property | If a = b, then | If AB = CD, then | If m∠A = m∠B, then |
| Transitive Property | If a = b and b = c then | If AB = CD and  CD = EF, then | If m∠A = m∠B and  m∠B = m∠C, then |

**Name the property of equality that justifies each statement.**

If m∠*A* = *m*∠*B,*  If JK + KL = GH + KL,

then m∠*B* = m∠*A* then JK = GH

If 3(x + 3) = 56, then If x = y and y = 2

3x + 9 = 56 then x = 2.