Learning Target 12 Guided Notes Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_

Algebraic Proof

algebraic proof -

|  |  |
| --- | --- |
| **Properties of Real Numbers** | |
| The following properties are true for any real numbers *a*, *b*, and *c*. | |
| Addition Property of Equality | If *a* = *b*, then *a* + *c* = *b* + *c*. |
| Subtraction Property of Equality | If *a* = *b*, then *a* – *c* = *b* – *c*. |
| Multiplication Property of Equality | If *a* = *b*, then *a* ∙ *c* = *b* ∙ *c*. |
| Division Property of Equality | If *a* = *b* and *c* ≠ 0, then . |
| Reflexive Property of Equality | *a* = *a* |
| Symmetric Property of Equality | If *a* = *b*, then *b* = *a*. |
| Transitive Property of Equality | If *a* = *b* and *b* = *c*, then *a* = *c*. |
| Substitution Property of Equality | If *a* = *b*, then *a* may be replaced by *b* in any equation or expression. |
| Distributive Property | *a*(*b* + *c*) = *ab* + *ac*. |

Example 1

|  |  |
| --- | --- |
| Statements | Reasons |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Example 2

|  |  |
| --- | --- |
| Statements | Reasons |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Example 3

|  |  |
| --- | --- |
| Statements | Reasons |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

Example 4

|  |  |
| --- | --- |
| Statements | Reasons |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |