

## Algebra

*Example 1 Given:  $3x + 2 = 14$*

*Prove:  $x = 4$*

*There is no picture to be drawn, so we will go directly to the T-Proof.*

| <i>STATEMENTS</i>                                | <i>REASONS</i>                 |
|--|--------------------------------|
| <i>1. <math>3x + 2 = 14</math></i>               | <i>Given</i>                   |
| <i>2. <math>(-2) \in \mathbb{R}</math></i>       | <i>Additive Inverse</i>        |
| <i>3. <math>3x + 2 + (-2) = 14 + (-2)</math></i> | <i>Add Prop Equality</i>       |
| <i>4. <math>3x + 0 = 12</math></i>               | <i>Add Inverse/ Arithmetic</i> |
| <i>5. <math>3x = 12</math></i>                   | <i>Identity for Add</i>        |
| <i>6. <math>3x/3 = 12</math></i>                 | <i>Division Prop Equality</i>  |
| <i>7. <math>1x = 4</math></i>                    | <i>Mult Inverse/Arithmetic</i> |
| <i>8. <math>x = 4</math></i>                     | <i>Identity for Mult</i>       |