Isosceles Triangle Theorem & its Converse

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| **Isosceles Triangle Theorem** | **Converse of Isosceles Triangle Theorem** |
| SETUP: If 2 **sides** are congruent,  RESULT: Then the 2 **opposite angles** are congruent. | SETUP: If 2 **angles** are congruent,  RESULT: Then the 2 **opposite sides** are congruent. |
| |  |  | | --- | --- | | Given:    Prove: | | | Statements | Reasons | |  | Given | |  | Isosceles Triangle Thm. | | |  |  | | --- | --- | | Given:    Prove: | | | Statements | Reasons | |  | Given | |  | **Converse** Isosc. Thm. | |

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| 1. | |  | 2. | |
| Given:      Prove: | |  | Given:      Prove: | |
| Statements | Reasons |  | Statements | Reasons |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| 3. | |  | 4. | |
| Given:    Prove: | |  | Given:    Prove: | |
| Statements | Reasons |  | Statements | Reasons |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| 5. | |  | 6. | |
| Given:    Prove: | |  | Given:    Prove: | |
| Statements | Reasons |  | Statements | Reasons |
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|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Equiangular Triangle 🡪 60˚ Angles

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| **Equiangular Triangle 🡪 60˚ Angles** | **60˚ Angles 🡪 Equiangular Triangle** |
| SETUP: If a triangle is equiangular,  RESULT: Then all of the angles are 60˚. | SETUP: If all of the angles are 60˚,  RESULT: Then the triangle is equiangular. |
| |  |  | | --- | --- | | Given: is equiangular    Prove: | | | Statements | Reasons | | is equiangular | Given | |  | Equiang. 🡪 60˚ | | |  |  | | --- | --- | | Given:    Prove: is equiangular | | | Statements | Reasons | |  | Given | | is equiangular | 60˚ 🡪 Equiang. | |

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| 7. | |  | 8. | |
| Given: is equiangular    Prove: | |  | Given:    Prove: is equiangular | |
| Statements | Reasons |  | Statements | Reasons |
| is equiangular | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | is equiangular | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| 9. | |  | 10. | |
| Given:    Prove: is equiangular | |  | Given: is equiangular    Prove: | |
| Statements | Reasons |  | Statements | Reasons |
|  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  | is equiangular | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| is equiangular | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |  |  | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| 11. | |  | 12. | |
| Given: On    Prove: | |  | Given: is equiangular    Prove: | |
| Statements | Reasons |  | Statements | Reasons |
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| 13. | |  | 14. | |
| Given: On    Prove: is equiangular | |  | Given: On    Prove: | |
| Statements | Reasons |  | Statements | Reasons |
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