



Given that:

$$\overline{TE} \cong \overline{RI} \quad \overline{TI} \cong \overline{RE} \quad m\angle TDE = m\angle ROI = 90^\circ$$

Show:

$$\overline{TD} \cong \overline{RO}$$

| Statement | Justification |
|---|--------------------|
| 1. $\overline{TE} \cong \overline{RI}$ | Given |
| 2. $\overline{TI} \cong \overline{RE}$ | Given |
| 3. $TIER$ is a parallelogram | Theorem 6-8 (1, 2) |
| 4. $\angle ETI \cong \angle IRE$ | Theorem 6-5 (3) |
| 5. $\angle TIR \cong \angle RET$ | Theorem 6-5 (3) |
| 6. $\triangle ETI \cong \triangle IRE$ | SAS (1, 2, 4) |
| 7. $\angle TEI \cong \angle RIE$ | CPCTC (6) |
| 8. $\angle TDE$ is a right \angle | Given |
| 9. $\angle ROI$ is a right \angle | Given |
| 10. $\triangle TED \cong \triangle IRO$ | AAS (1, 7, 8) |
| 11. $\overline{TD} \cong \overline{RO}$ | CPCTC (10) |