

5.REV.1 ~ End of Chapter Review

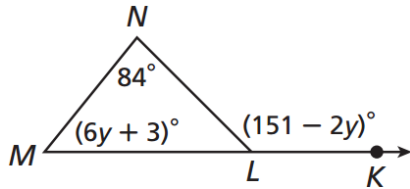
Tell whether a triangle can have sides with the given lengths. Explain your reasoning.

1. 39, 19, 46
2. 5.0, 2.9, 3.8

The lengths of two sides of a triangle are given. Find the range of possible lengths for the third side.

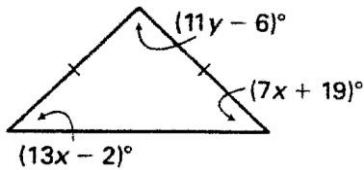
3. 9 & 19
4. 8 & 13

5. Use the Exterior Angle Theorem to set up and solve an equation to find the value of y .



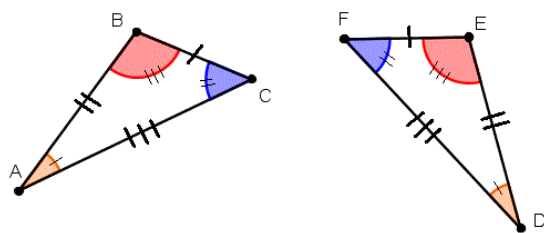
6. Order the sides of $\triangle LMN$ from shortest to longest.

7. The triangle shown is isosceles. Set up and solve equations to find the values of x and y . No system of equations is needed.



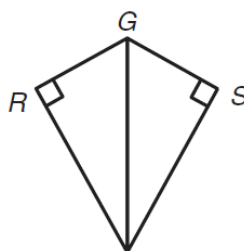
8. $\angle 1$ and $\angle 2$ are two base angles of an isosceles triangle; $m\angle 1 = 5x^2 + 42x - 30$ and $m\angle 2 = -5x$. Set up and solve a quadratic equation and find the value of x (that makes sense). Then find $m\angle 3$, the vertex angle.

9. $\triangle ABC \cong \triangle DEF$, $m\angle B = 98^\circ$, $m\angle C = 22^\circ$, $m\angle D = 3x - y$, and $m\angle F = -10x - 9y$. Set up and solve a system of equations to find the values of x and y .



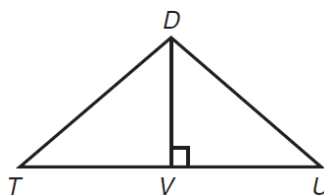
Complete each proof.

10. Given: \overline{GF} bisects $\angle RGS$
 $\angle R$ & $\angle S$ are right angles
 Prove: $\triangle FRG \cong \triangle FSG$



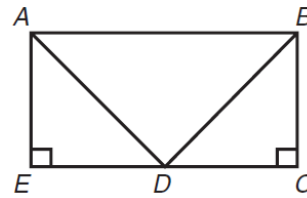
| STATEMENTS | REASONS |
|---|----------|
| 1. \overline{GF} bisects $\angle RGS$ | 1. Given |
| 2. | 2. |
| 3. $\angle R$ & $\angle S$ are right angles | 3. Given |
| 4. | 4. |
| 5. | 5. |
| 6. $\triangle FRG \cong \triangle FSG$ | 6. |

11. Given: \overline{DV} is an altitude & a median of $\triangle TDU$
 Prove: $\triangle DVT \cong \triangle DVU$



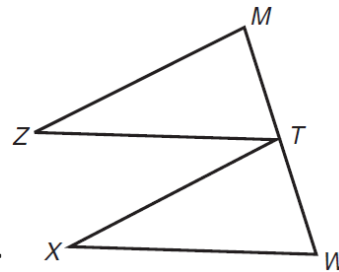
| STATEMENTS | REASONS |
|---|----------|
| 1. \overline{DV} is an altitude & a median of $\triangle TDU$ | 1. Given |
| 2. | 2. |
| 3. | 3. |
| 4. | 4. |
| 5. | 5. |
| 6. $\triangle DVT \cong \triangle DVU$ | 6. |

12. Given: D is the midpoint of \overline{EC}
 $\triangle ADB$ is isosceles with base \overline{AB}
 $\angle E$ & $\angle C$ are right angles
 Prove: $\triangle AED \cong \triangle BCD$



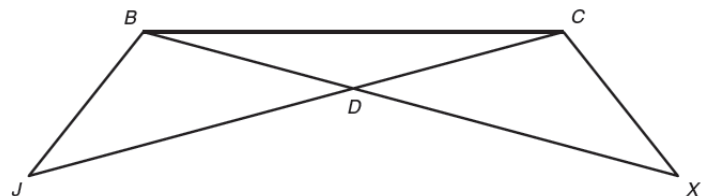
| STATEMENTS | REASONS |
|---|----------|
| 1. D is the midpoint of \overline{EC} | 1. Given |
| 2. | 2. |
| 3. $\triangle ADB$ is isosceles with base \overline{AB} | 3. Given |
| 4. | 4. |
| 5. $\angle E$ & $\angle C$ are right angles | 5. Given |
| 6. | 6. |
| 7. $\triangle AED \cong \triangle BCD$ | 7. |

13. Given: $\overline{TZ} \cong \overline{WX}$
 $\overline{TM} \cong \overline{WT}$
 $\overline{TZ} \parallel \overline{WX}$
 Prove: $\overline{MZ} \cong \overline{TX}$



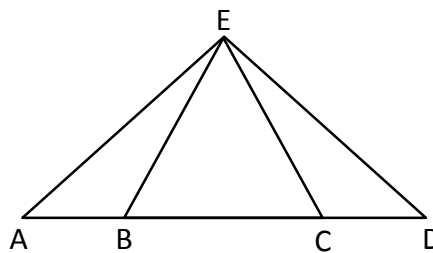
| STATEMENTS | REASONS |
|--|----------|
| 1. $\overline{TZ} \cong \overline{WX}$ | 1. Given |
| 2. $\overline{TM} \cong \overline{WT}$ | 2. Given |
| 3. $\overline{TZ} \parallel \overline{WX}$ | 3. Given |
| 4. | 4. |
| 5. | 5. |
| 6. $\overline{MZ} \cong \overline{TX}$ | 6. |

14. Given: $\overline{JD} \cong \overline{XD}$
 $\angle J \cong \angle X$
 Prove: $\overline{BD} \cong \overline{CD}$



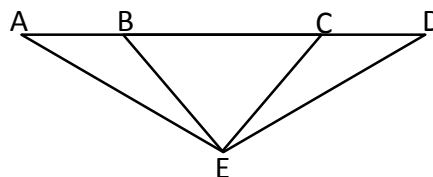
| STATEMENTS | REASONS |
|--|----------|
| 1. $\overline{JD} \cong \overline{XD}$ | 1. Given |
| 2. $\angle J \cong \angle X$ | 2. Given |
| 3. | 3. |
| 4. | 4. |
| 5. $\overline{BD} \cong \overline{CD}$ | 5. |

15. Given: $\angle AEC \cong \angle DEB$
 $\overline{BE} \cong \overline{CE}$
 $\angle A \cong \angle D$
 Prove: $\triangle ABE \cong \triangle DCE$



| STATEMENTS | REASONS |
|--|----------|
| 1. $\angle AEC \cong \angle DEB$ | 1. Given |
| 2. $\overline{BE} \cong \overline{CE}$ | 2. Given |
| 3. $\angle A \cong \angle D$ | 3. Given |
| 4. | 4. |
| 5. | 5. |
| 6. $\triangle ABE \cong \triangle DCE$ | 6. |

16. Given: $\angle AEC \cong \angle DEB$
 $\overline{AE} \cong \overline{DE}$
 Prove: $\triangle ACE \cong \triangle DBE$



| STATEMENTS | REASONS |
|--|----------|
| 1. $\angle AEC \cong \angle DEB$ | 1. Given |
| 2. $\overline{AE} \cong \overline{DE}$ | 2. Given |
| 3. | 3. |
| 4. $\triangle ACE \cong \triangle DBE$ | 4. |