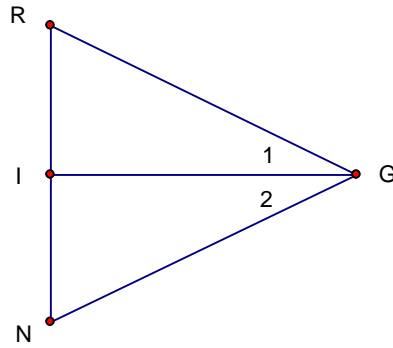


**Geometry**

**Unit One B: Two-Column Proofs #5 (HW18)**

1. Given:  $\overline{RN} \perp \overline{IG}$ ; I is the midpoint of  $\overline{RN}$

Prove:  $\angle 1 \cong \angle 2$



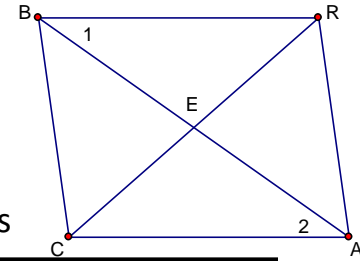
| Statements   | Reasons |
|--|---------|
| 1. $\overline{RN} \perp \overline{IG}$                                     | 1.      |
| 2.   | 2.      |
| 3.   | 3.      |
| 4. I is the midpoint of $\overline{RN}$                                    | 4.      |
| 5.   | 5.      |
| 6.   | 6.      |
| 7. $\Delta \underline{\hspace{1cm}} \cong \Delta \underline{\hspace{1cm}}$ | 7.      |
| 8.   | 8.      |

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Period: \_\_\_\_\_

2. Given:  $\overline{BR} \cong \overline{AC}$ ;  $\angle 1 \cong \angle 2$

Prove: E is the midpoint of  $\overline{RC}$



| Statements   | Reasons                   |
|--|---------------------------|
| 1. $\overline{BR} \cong \overline{AC}$                                     | 1.                        |
| 2.   | 2. Given                  |
| 3.   | 3.                        |
| 4. $\Delta \underline{\hspace{1cm}} \cong \Delta \underline{\hspace{1cm}}$ | 4.                        |
| 5.   | 5.                        |
| 6.   | 6. Definition of midpoint |

For #3-6, draw and label a diagram. Then, solve for the requested measure.

3. Given:  $B$  is the midpoint of  $\overline{AC}$ ;  $AB = 3x + 15$ ;  $BC = 5x - 7$ .

Find  $AC$ .

4. Given:  $\angle AEC$  is bisected by  $\overline{EB}$ ;  $m\angle AEB = 7x + 14$ ;  
 $m\angle BEC = 2x + 49$ .

Find  $m\angle AEB$ .

5. Given:  $\overline{EC}$  is the perpendicular bisector of  $\overline{AB}$ ;  $m\angle AEC = 10x + 20$ .  
Also,  $\overline{EC}$  intersects  $\overline{AB}$  at  $E$ .

Find  $x$ .

6. Solve:  $2x + 5y = 22$

$$7x + 2y = 15$$