*Your Work:*                                                      *Corrected Work:*

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1. Refer to the diagram. Fill in the reason for the statement.

   a. If $m\angle 3 = m\angle 6$, then $m \parallel n$

      <u>Alt int ∠'s ≅ → ∥ lines</u>.

   b. If $m\angle 2 = m\angle 6$, then $m \parallel n$

      <u>Corr ∠'s ≅ → ∥ lines</u>.

   c. If $m\angle 2 = m\angle 7$, then $m \parallel n$

      <u>Alt ext ∠'s ≅ → ∥ lines</u>.

   d. If $\angle 3$ and $\angle 5$ are supplementary, then $m \parallel n$
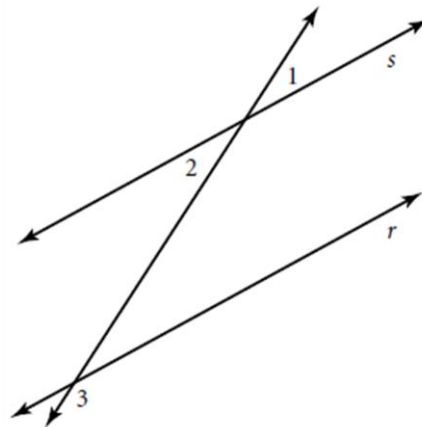
      _____.

      s-s int ∠'s supp → ∥ lines

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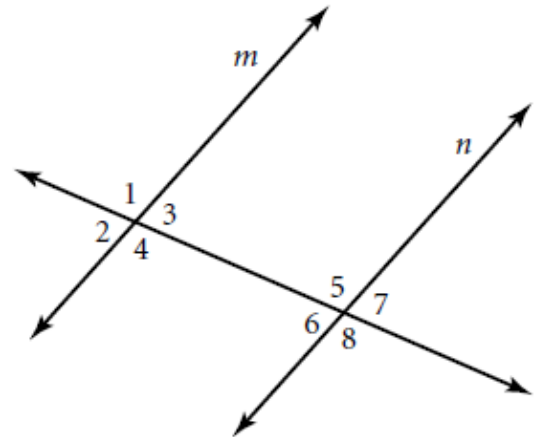
2. In the figure at right, $m\angle 1 = 3x + 14$, $m\angle 2 = 9x + 14$, and $m\angle 3 = 30x + 14$. Determine whether or not $r \parallel s$. Justify your answer.

   <u>Not ∥ → need s-s ext ∠'s to be</u>

   <u>supp to be∥not ≅ to be ∥</u>

   _____

   3x + 14 = 9x + 14
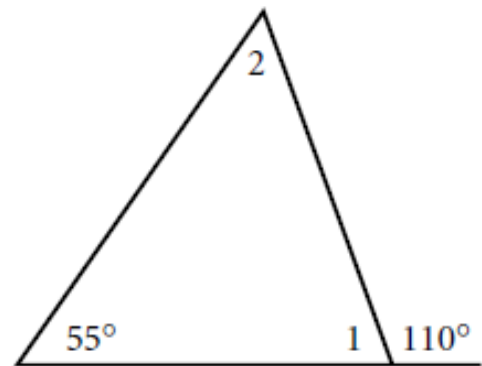
   3x = 9x

   x = 0

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3. Use the figure to the right find:

   $m\angle 1 = $ <u>70°</u>

   $m\angle 2 = $ <u>55°</u>
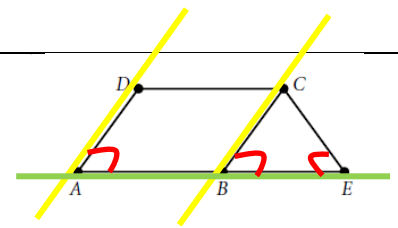
   The angle which measures 110° is called an <u>Exterior ∠</u>.

   (not super important)

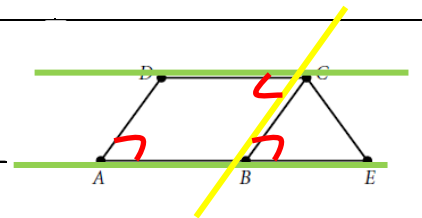**4. Given:** $\overline{DA} \parallel \overline{BC}$; $\angle A \cong \angle E$
  **Prove:** $\triangle CBE$ is isosceles with base $\overline{BE}$



| Statements | Reasons |
|---|---|
| 1. $\overline{DA} \parallel \overline{BC}$ | 1. Given |
| 2. $\angle A \cong \angle CBE$ | 2. ∥ lines→corr ∠'s $\cong$ |
| 3. $\angle A \cong \angle E$ | 3. Given |
| 4. $\angle CBE \cong \angle E$ | 4. Transitive prop (2,3) |
| 5. $\triangle CBE$ is isosceles with base $\overline{BE}$ | 5. def of isosceles $\triangle$ |

**5. Given:** $\overline{DC} \parallel \overline{AE}$; $\angle A \cong \angle DCB$
  **Prove:** $\overline{DA} \parallel \overline{BC}$



| Statements | Reasons |
|---|---|
| 1. $\overline{DC} \parallel \overline{AE}$ | 1. Given |
| 2. $\angle DCB \cong \angle CBE$ | 2. ∥ lines→alt int ∠'s $\cong$ |
| 3. $\angle A \cong \angle DCB$ | 3. Given |
| 4. $\angle A \cong \angle CBE$ | 4. Transitive prop (2,3) |
| 5. $\overline{DA} \parallel \overline{BC}$ | 5. corr ∠'s $\cong \rightarrow$ ∥ lines |

6. Factor: $x^2 - 10x - 24$

  (x - 12)(x + 2)

7. Solve: $x^2 - 3x + 2 = 0$

  (x -2)(x - 1) = 0

  x = 2, x = 1