

Name \_\_\_\_\_

Geometry

Interior Angles

① interior angle sum

② set up equation

③ solve for unknown, plug in if needed

Find the value for each variable.

1.

$$y = 135^\circ$$

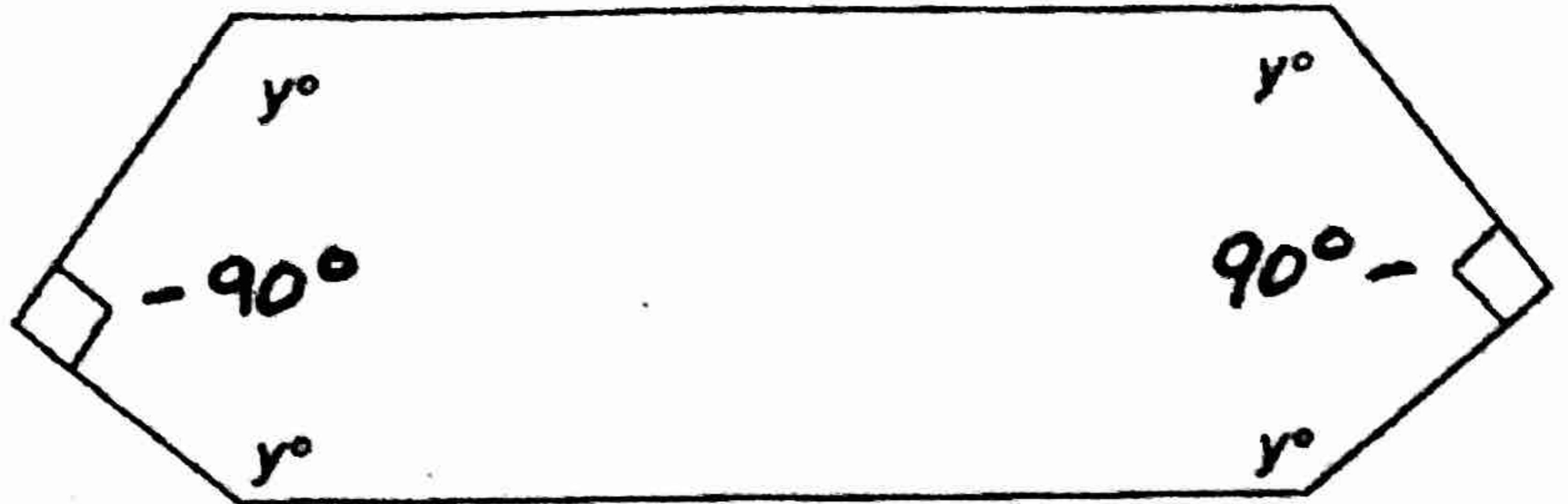
$$\textcircled{1} (6-2) \cdot 180 = 720$$

$$\textcircled{2} 4y + 90 + 90 = 720$$

$$4y + 180 = 720$$

$$\begin{array}{r} 4y + 180 = 720 \\ -180 \quad -180 \\ \hline 4y = 540 \\ \frac{4y}{4} = \frac{540}{4} \end{array}$$

$$y = 135$$



2.

$$x = 120^\circ$$

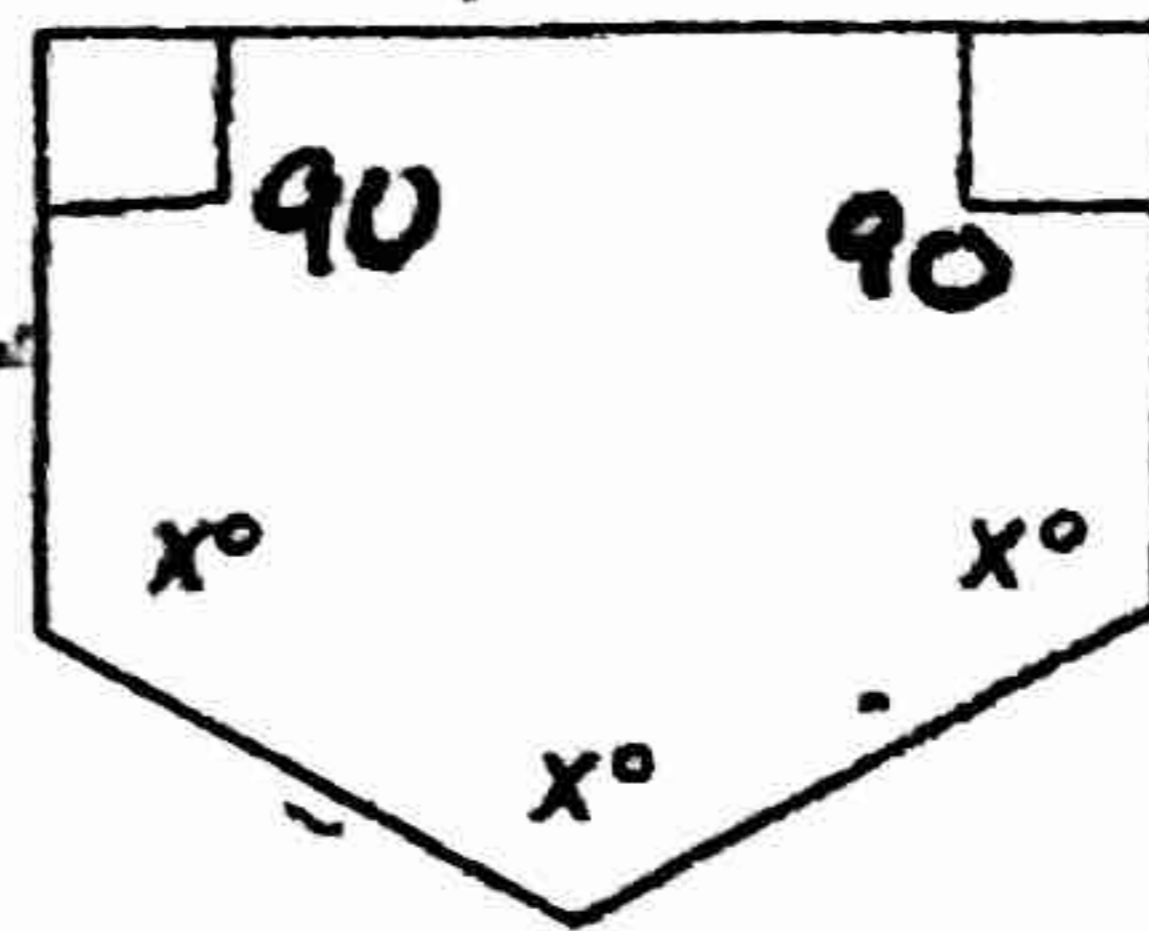
$$\textcircled{1} (5-2) \cdot 180 = 540$$

$$\textcircled{2} 3x + 180 = 540$$

$$\begin{array}{r} 3x + 180 = 540 \\ -180 \quad -180 \\ \hline 3x = 360 \end{array}$$

$$\frac{3x}{3} = \frac{360}{3}$$

$$x = 120$$



3.

$$x = 130^\circ$$

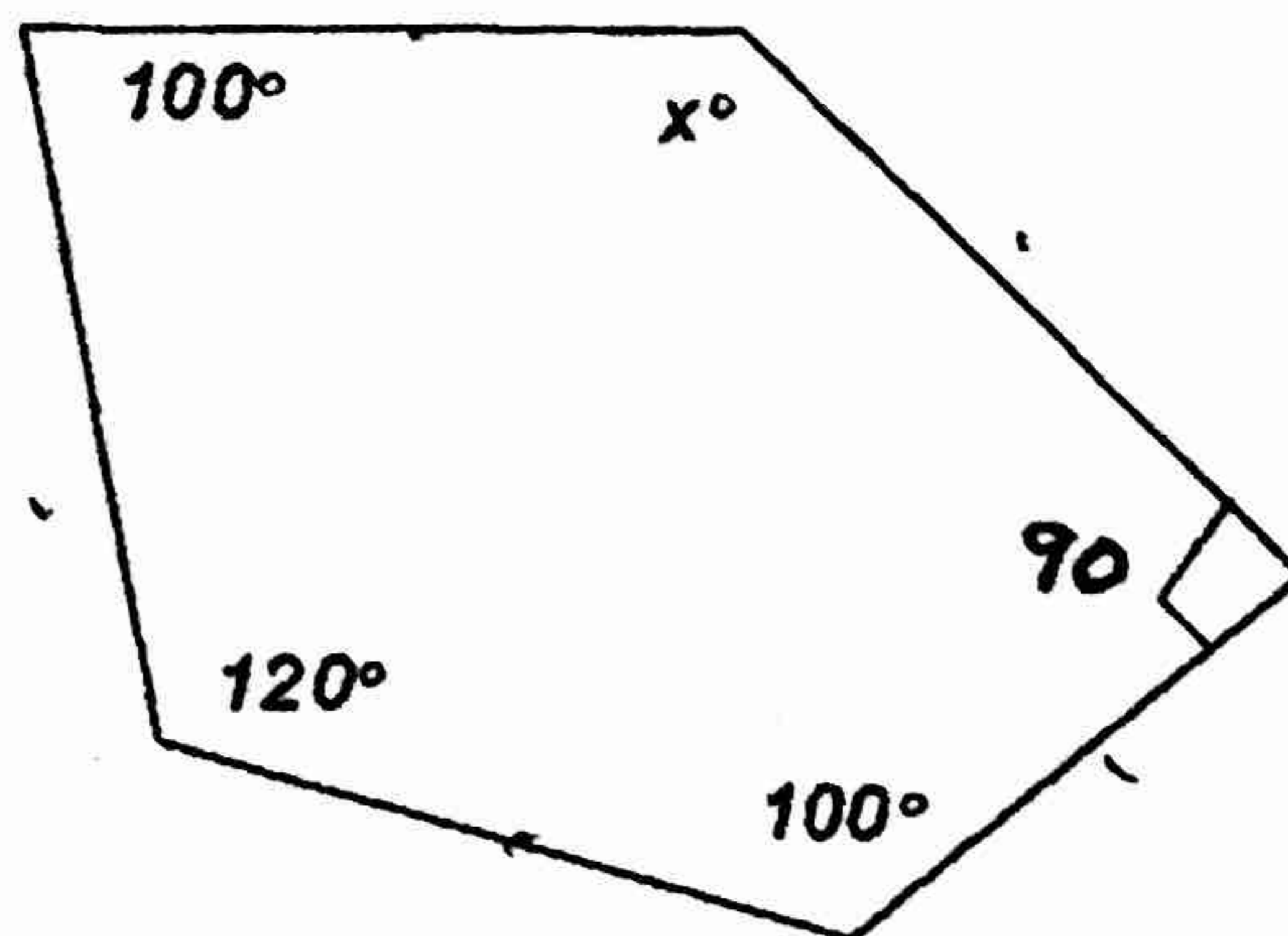
$$\textcircled{1} (5-2) \cdot 180 = 540$$

$$\textcircled{2} x + 100 + 120 + 100 + 90 = 540$$

$$x + 410 = 540$$

$$\begin{array}{r} x + 410 = 540 \\ -410 \quad -410 \\ \hline x = 130 \end{array}$$

$$x = 130$$

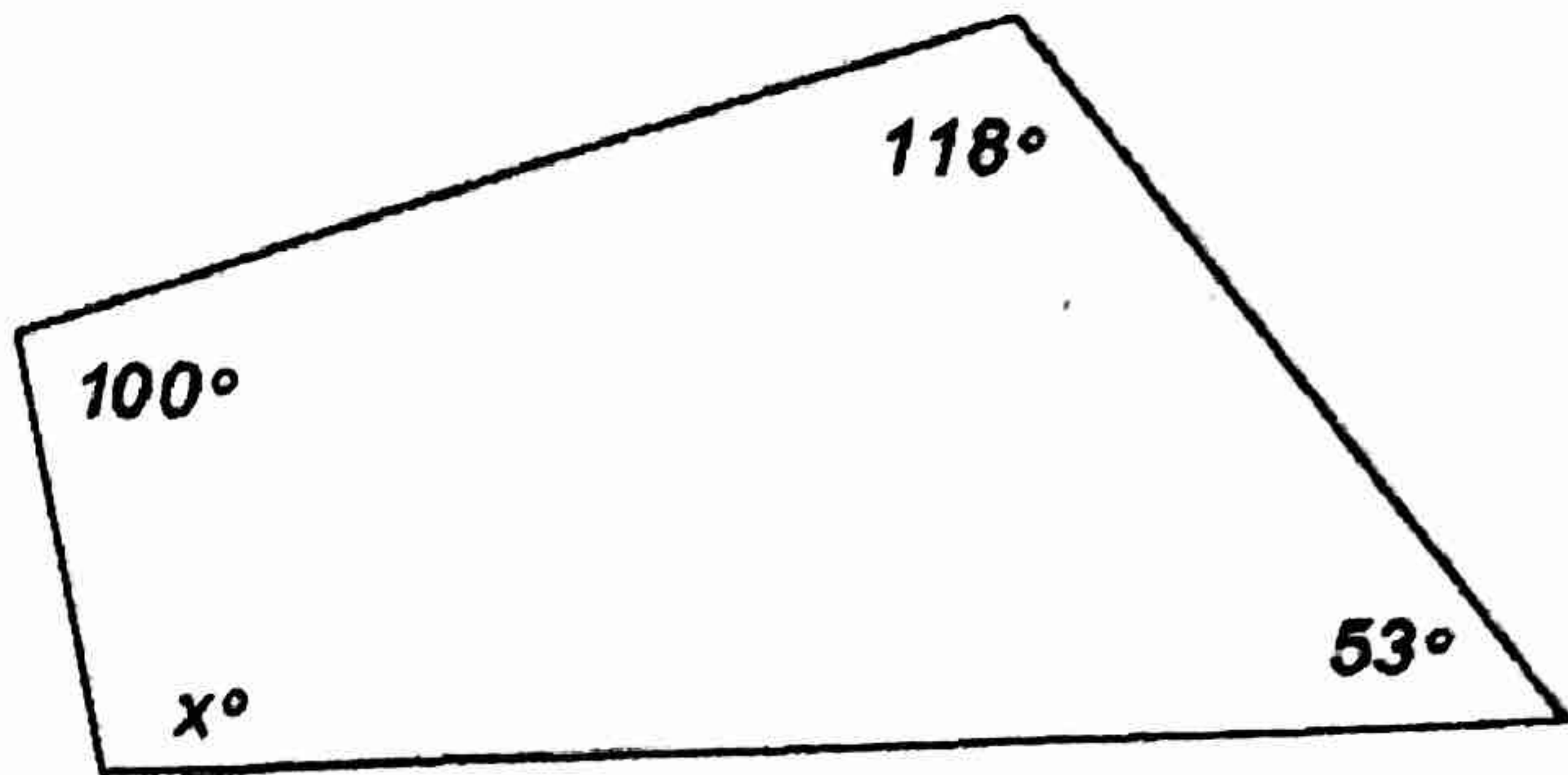


4.  
 $x = 89^\circ$

①  $(4-2) \cdot 180 = 360$   
 ②  $x + 53 + 118 + 100 = 360$   
 $x + 271 = 360$   
 $-271 \quad -271$   


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 $x = 89$

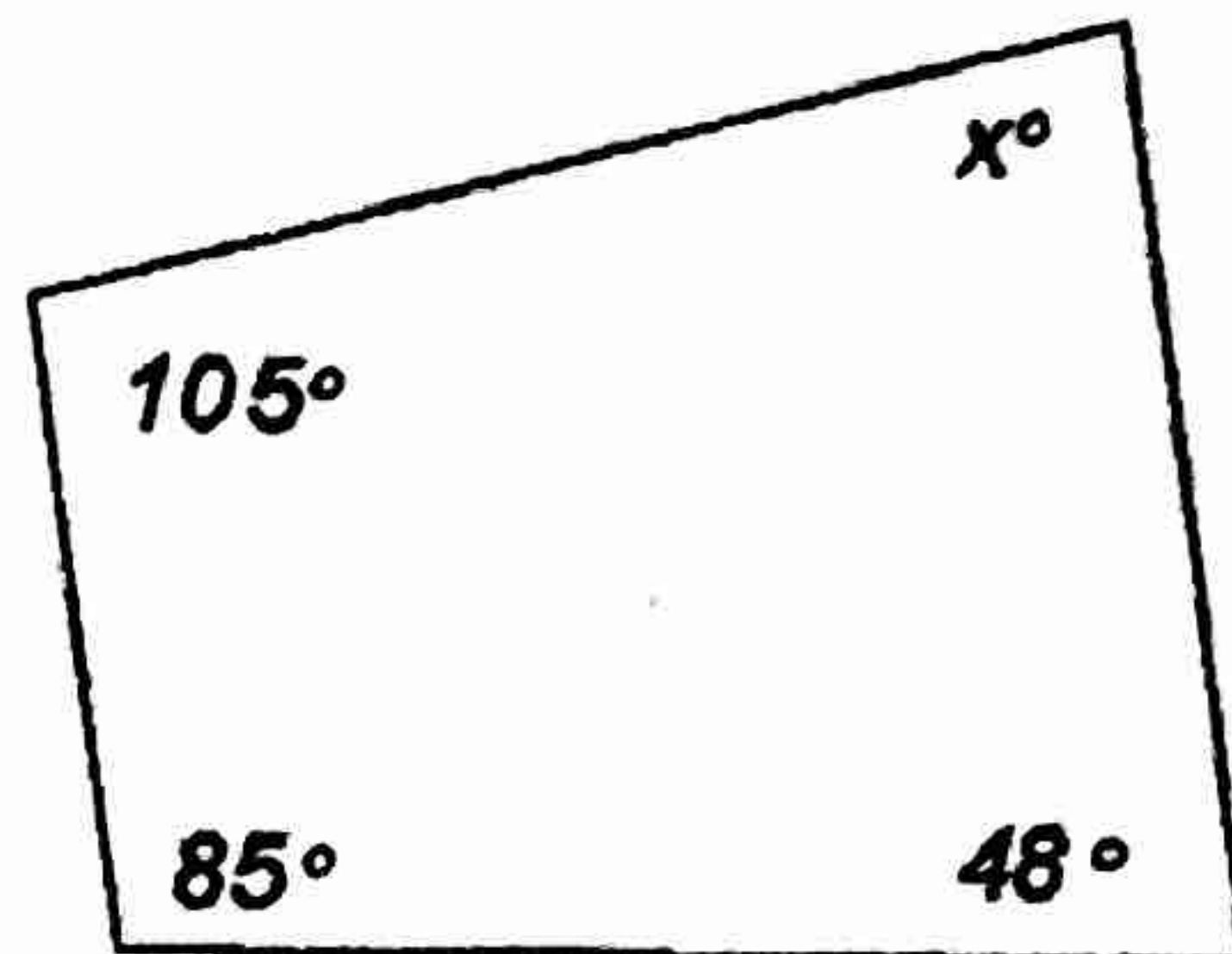


5.  
 $x = 122^\circ$

①  $(4-2) \cdot 180 = 360$   
 ②  $x + 105 + 85 + 48 = 360$   
 $x + 238 = 360$   
 $-238 \quad -238$   


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 $x = 122$

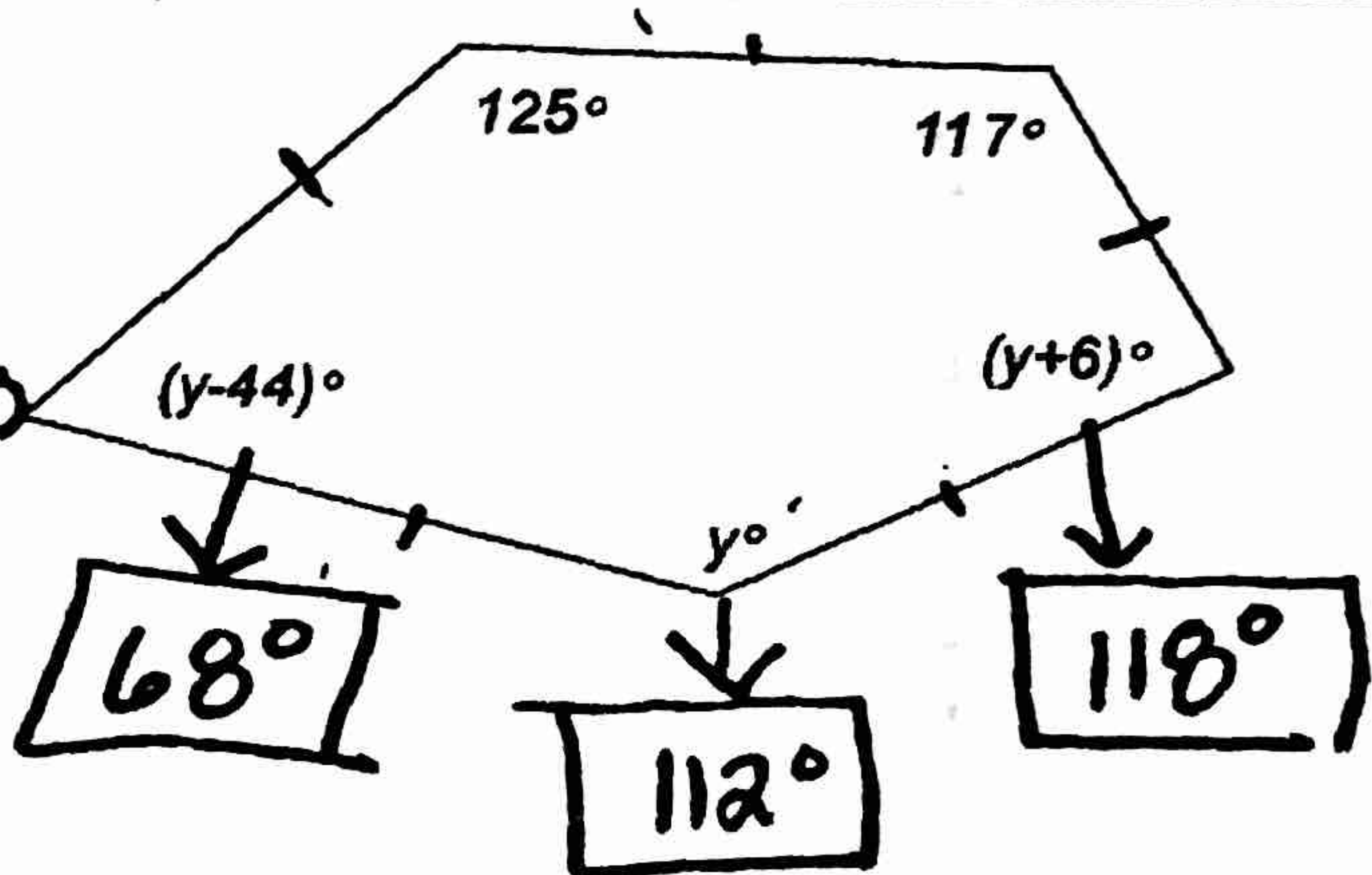


6.  
 $y = 112^\circ$

①  $(5-2) \cdot 180 = 540$   
 ②  $y - 44 + y + y + 6 + 117 + 125 = 540$   
 $3y + 204 = 540$   
 $-204 \quad -204$   


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 $3y = 336$   
 $\frac{3y}{3} = \frac{336}{3}$   
 $y = 112$



7.  
 $x = 97.5$

①  $(6-2) \cdot 180 = 720$   
 ②  $2x - 50 + 150 + 90 + x + 20 + 80 + x + 40 = 720$   
 $4x + 330 = 720$   
 $-330 \quad -330$   


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 $4x = 390$   
 $\frac{4x}{4} = \frac{390}{4}$   
 $x = 97.5$

