

LESSON 6.5

Exercise Set A



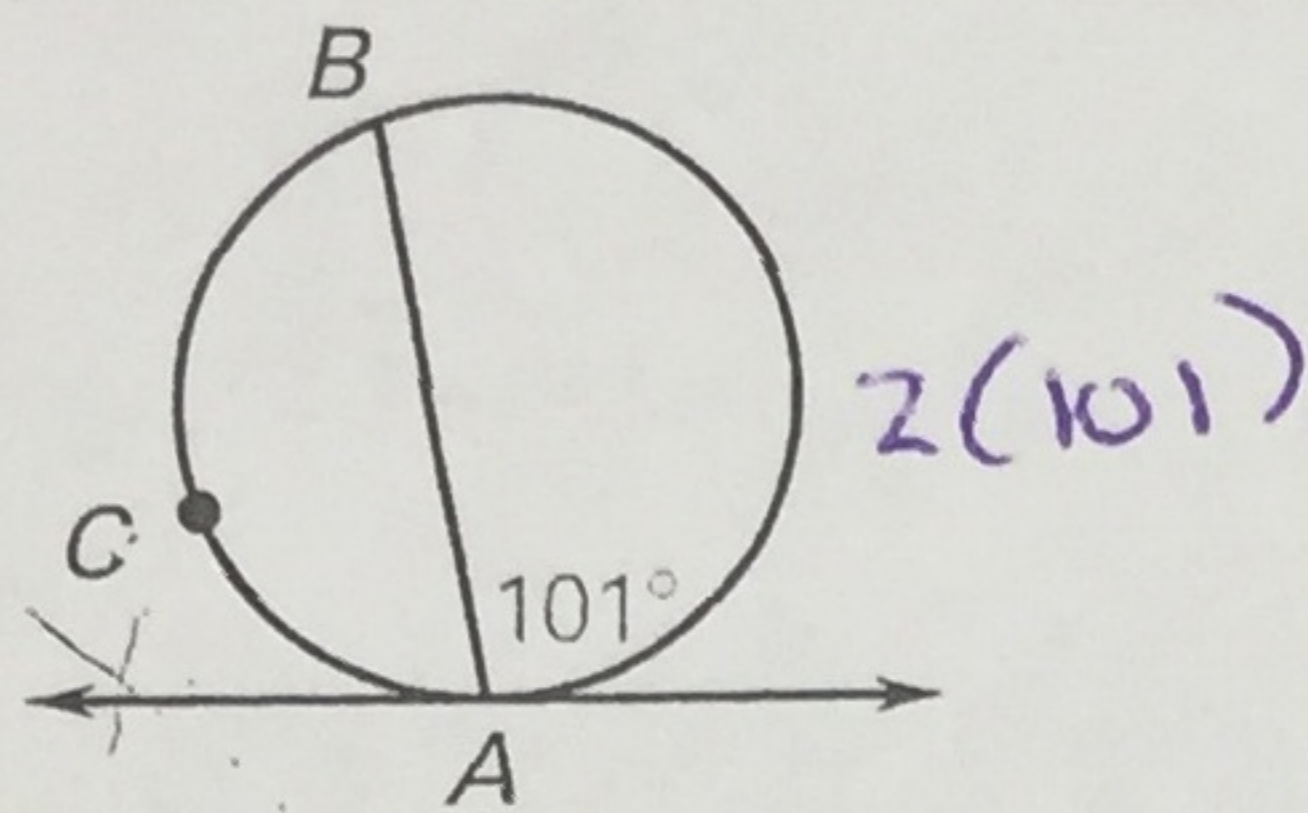
MM2G3b Understand and use properties of central, inscribed, and related angles.

MM2G3d Justify measurements and relationships in circles using geometric and algebraic properties.

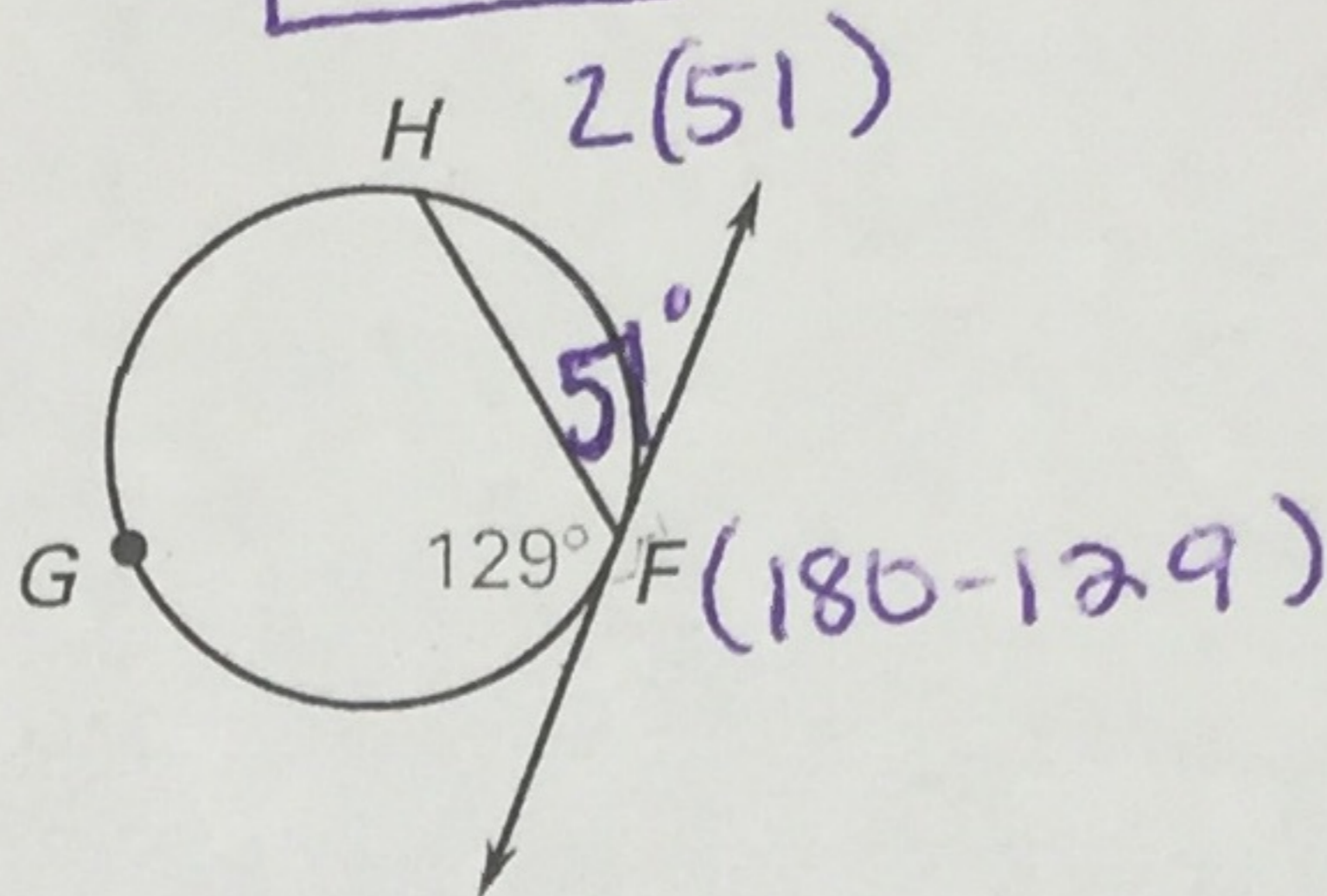
30.5

Find the indicated arc measure.

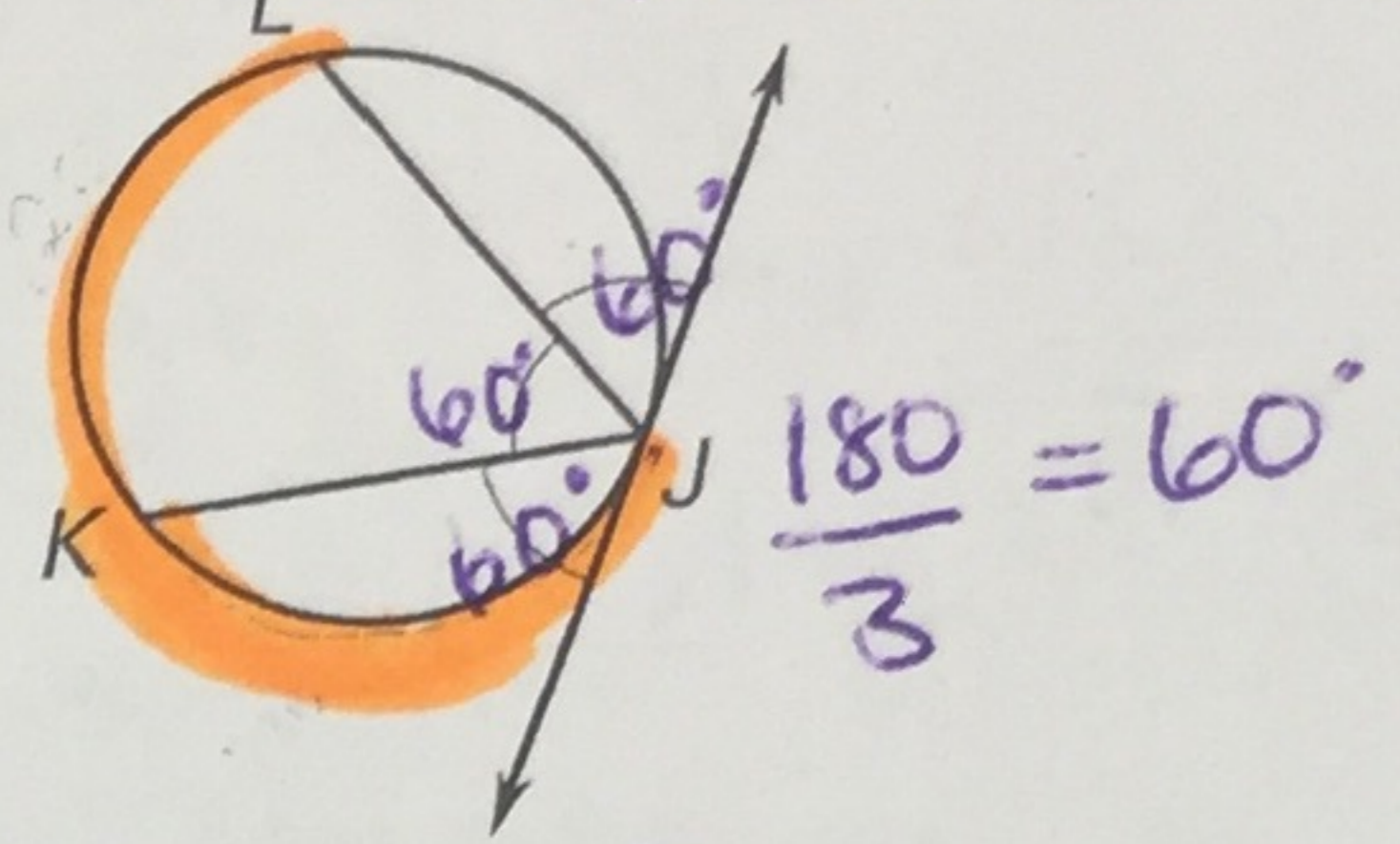
1. $m\widehat{AB} = 202^\circ$



2. $m\widehat{FH} = 102^\circ$



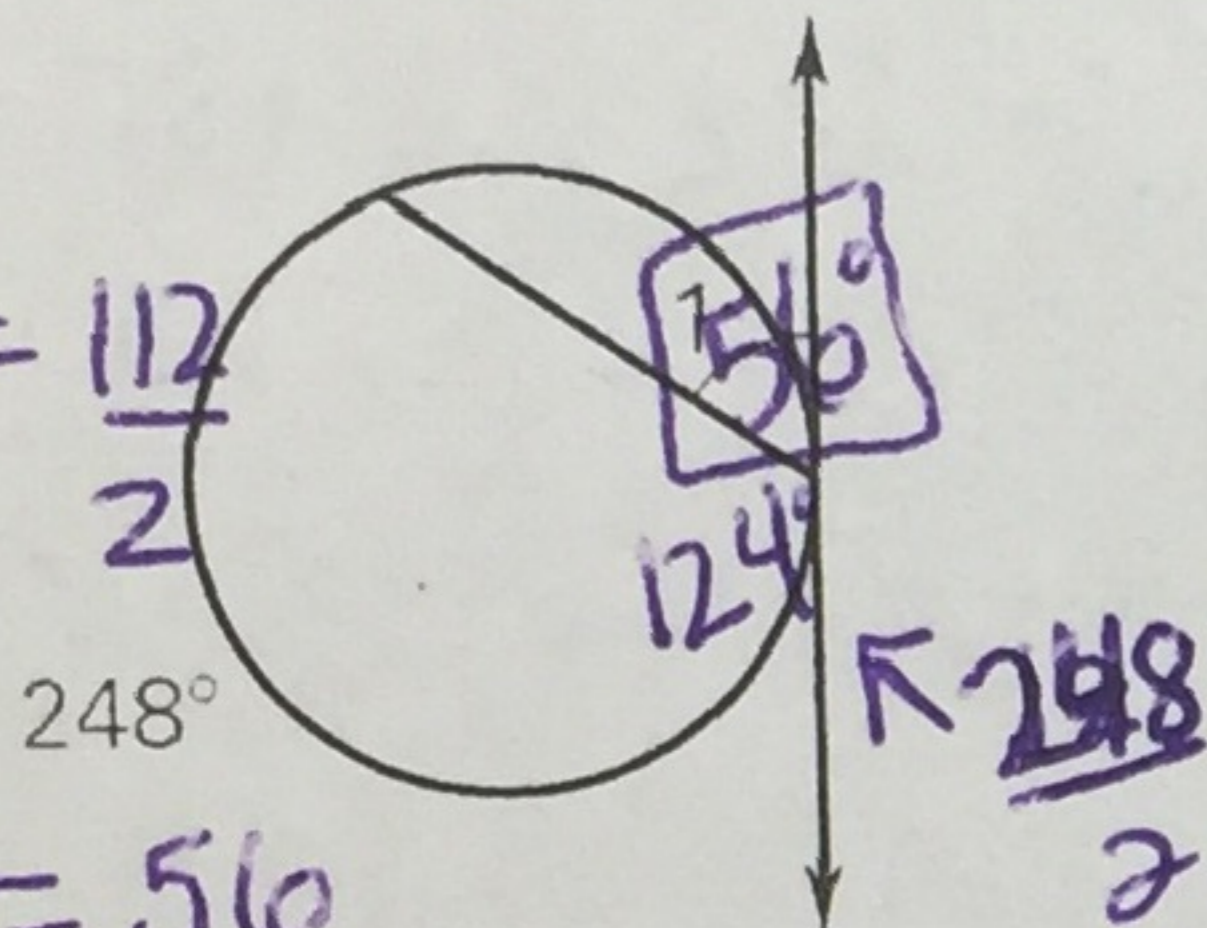
3. $m\widehat{JKL} = 240^\circ$
 $2(120)$



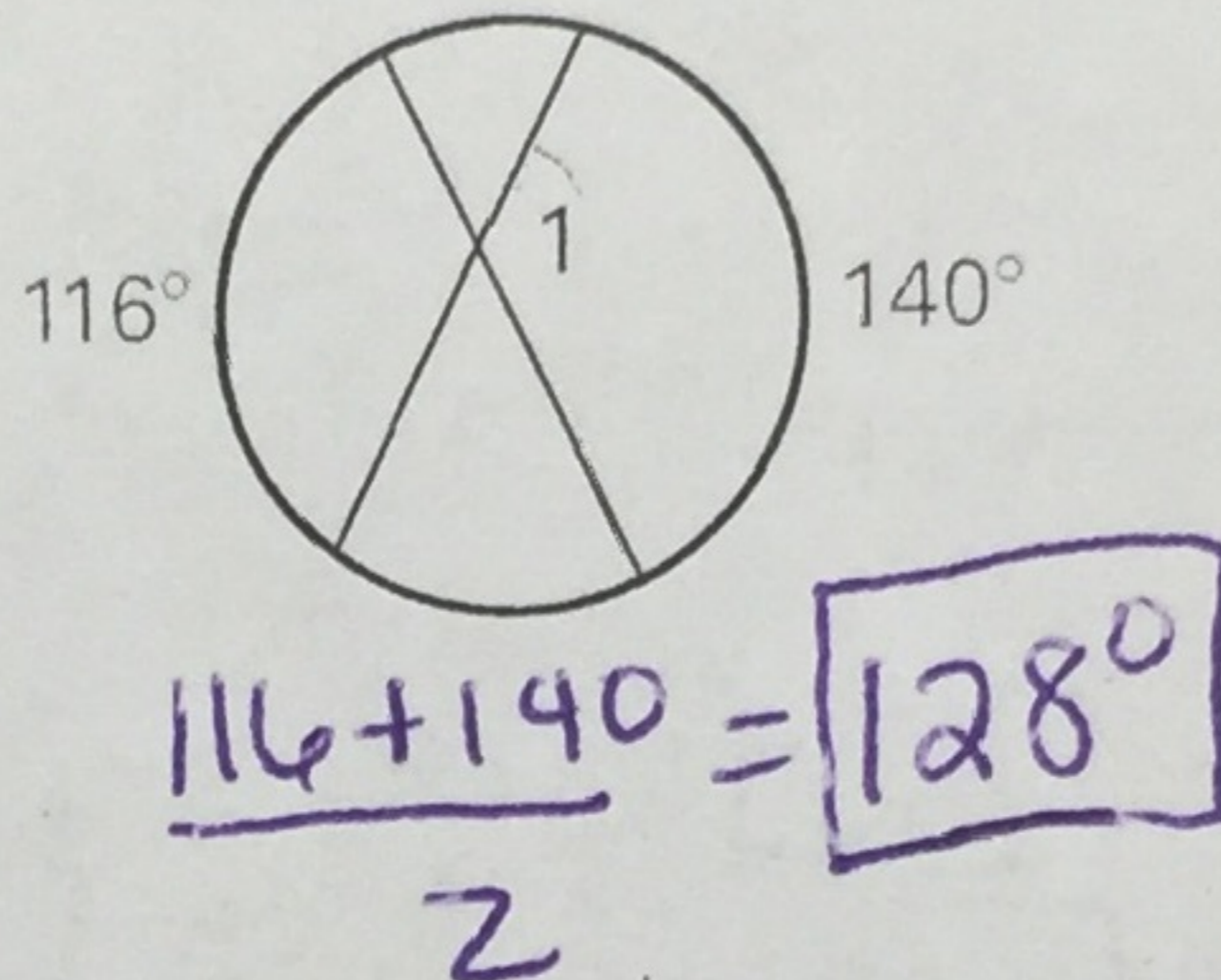
Find $m\angle 1$.

4.

2 ways
 $360 - 248 = 112$
 $\frac{112}{2} = 56$
 OR
 $180 - 124 = 56$

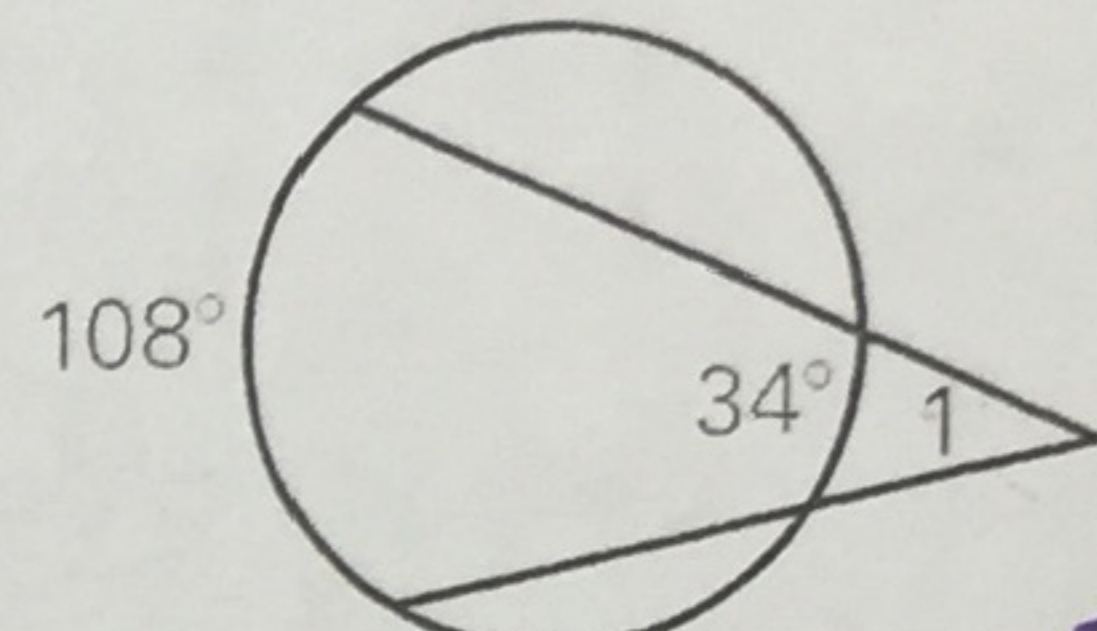


5.



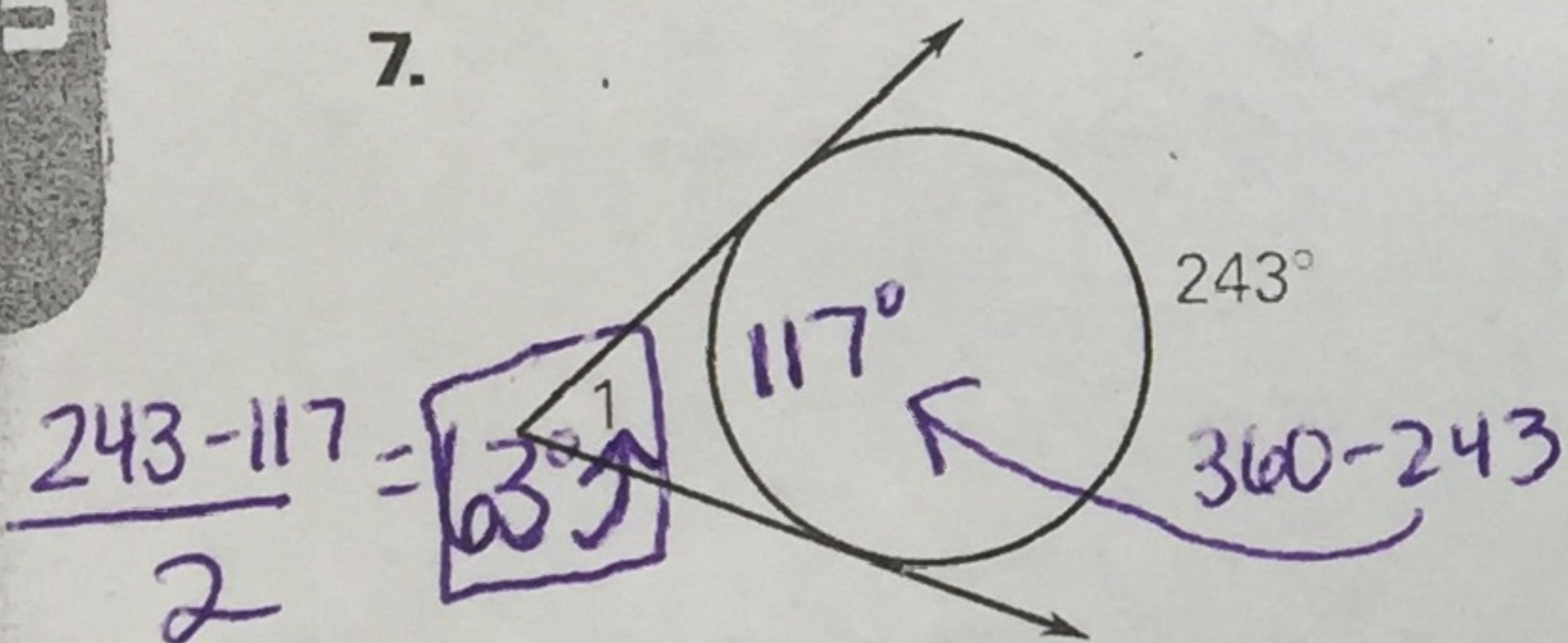
$\frac{116 + 140}{2} = 128^\circ$

6.



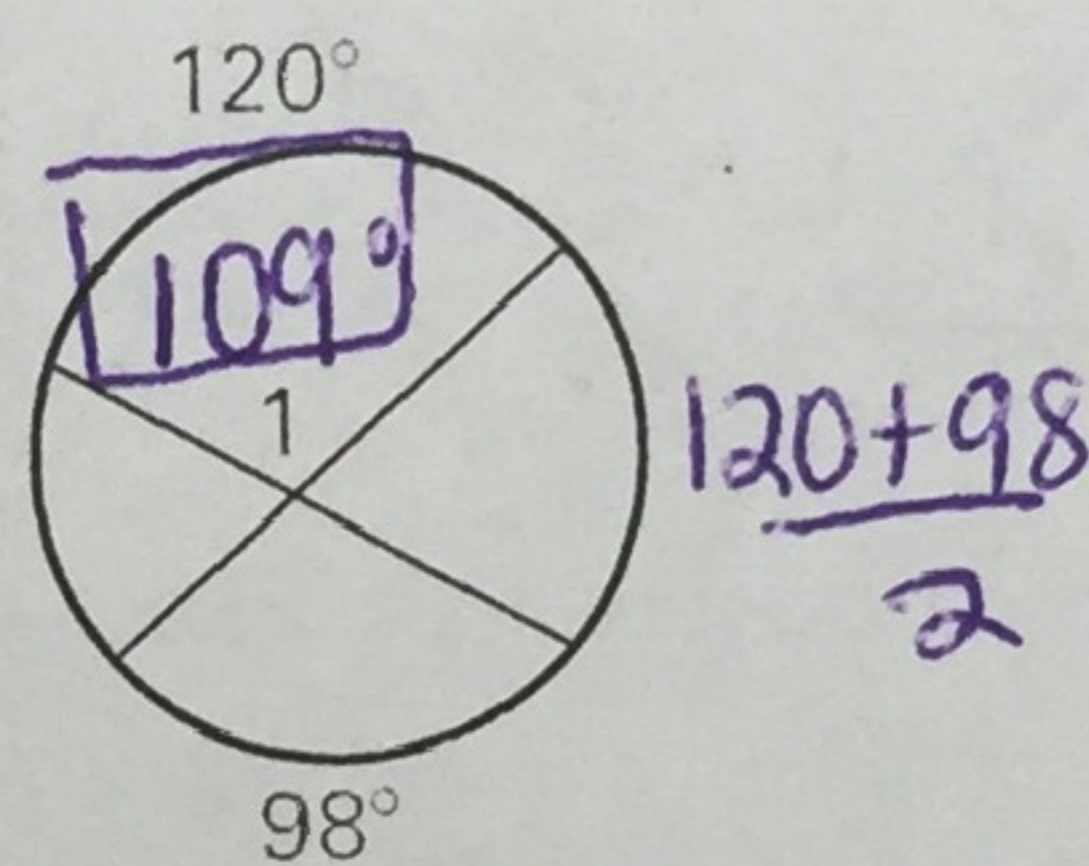
$\frac{108 - 34}{2} = 37^\circ$

7.



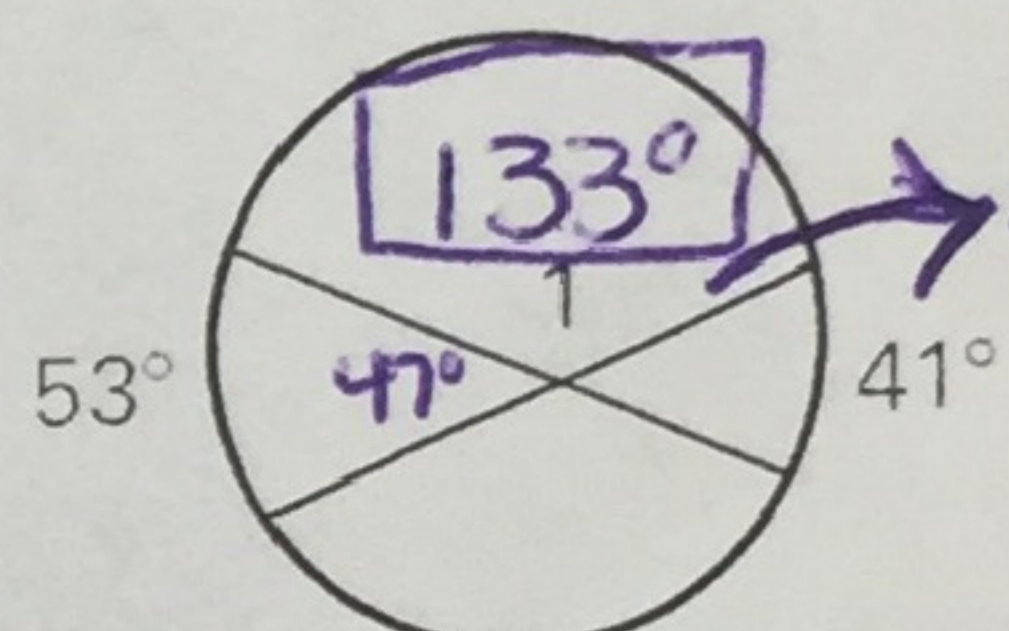
$\frac{243 - 117}{2} = 63^\circ$
 $360 - 243 = 117$

8.



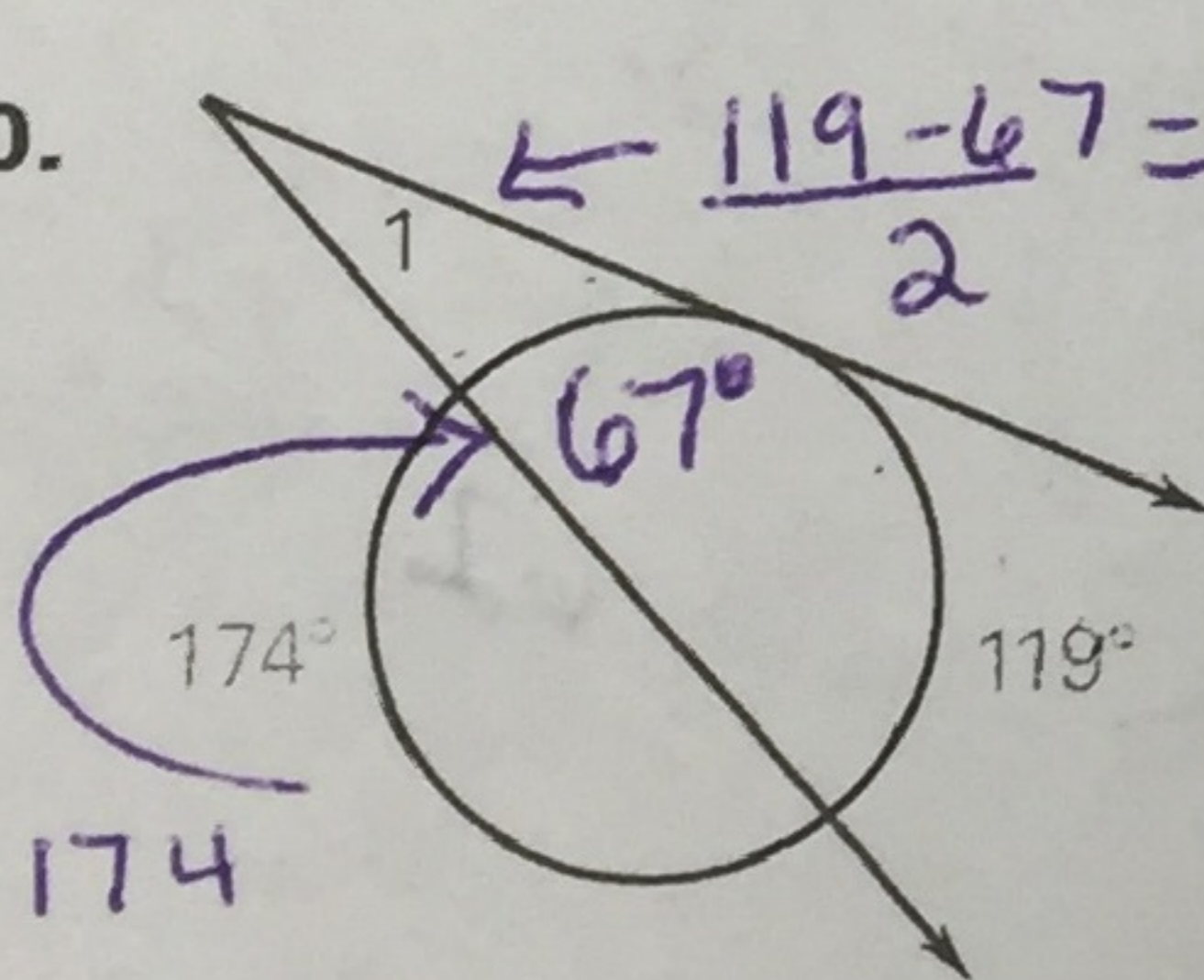
$\frac{120 + 98}{2} = 109^\circ$

9.



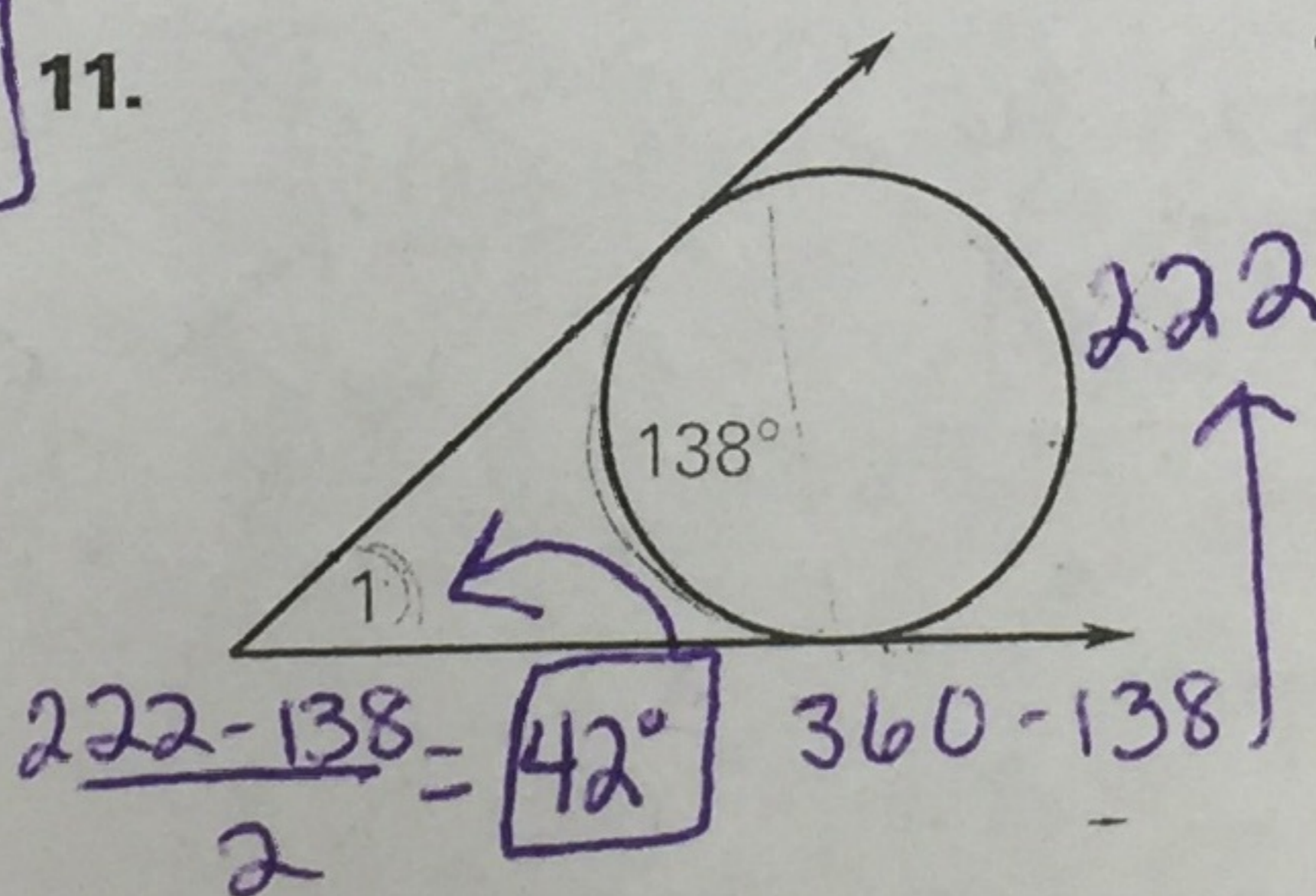
$\frac{53 + 41}{2} = 47$

10.



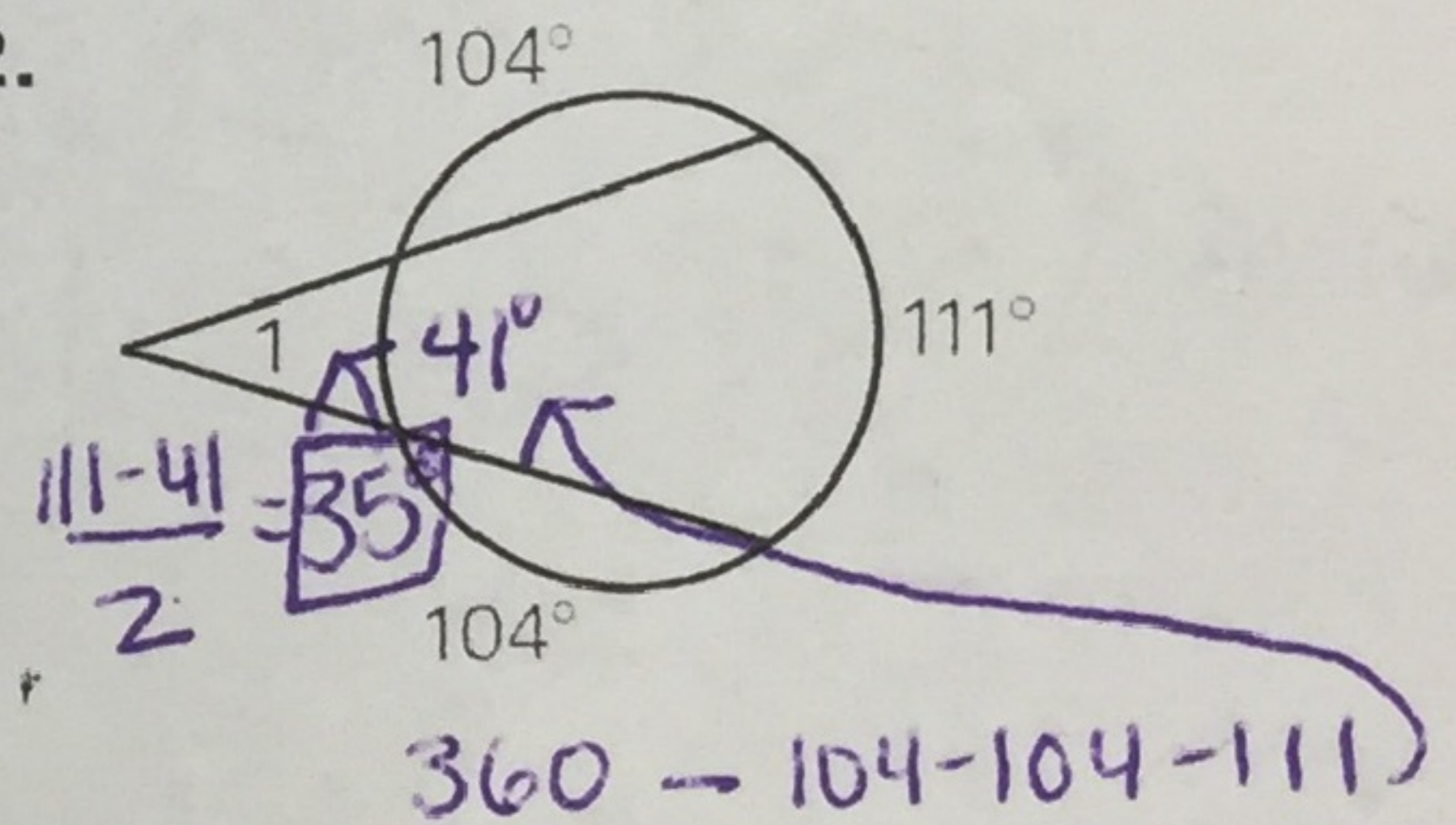
$\frac{119 - 67}{2} = 26^\circ$
 $360 - 119 - 174 = 67$

11.



$\frac{222 - 138}{2} = 42^\circ$
 $360 - 138 = 222$

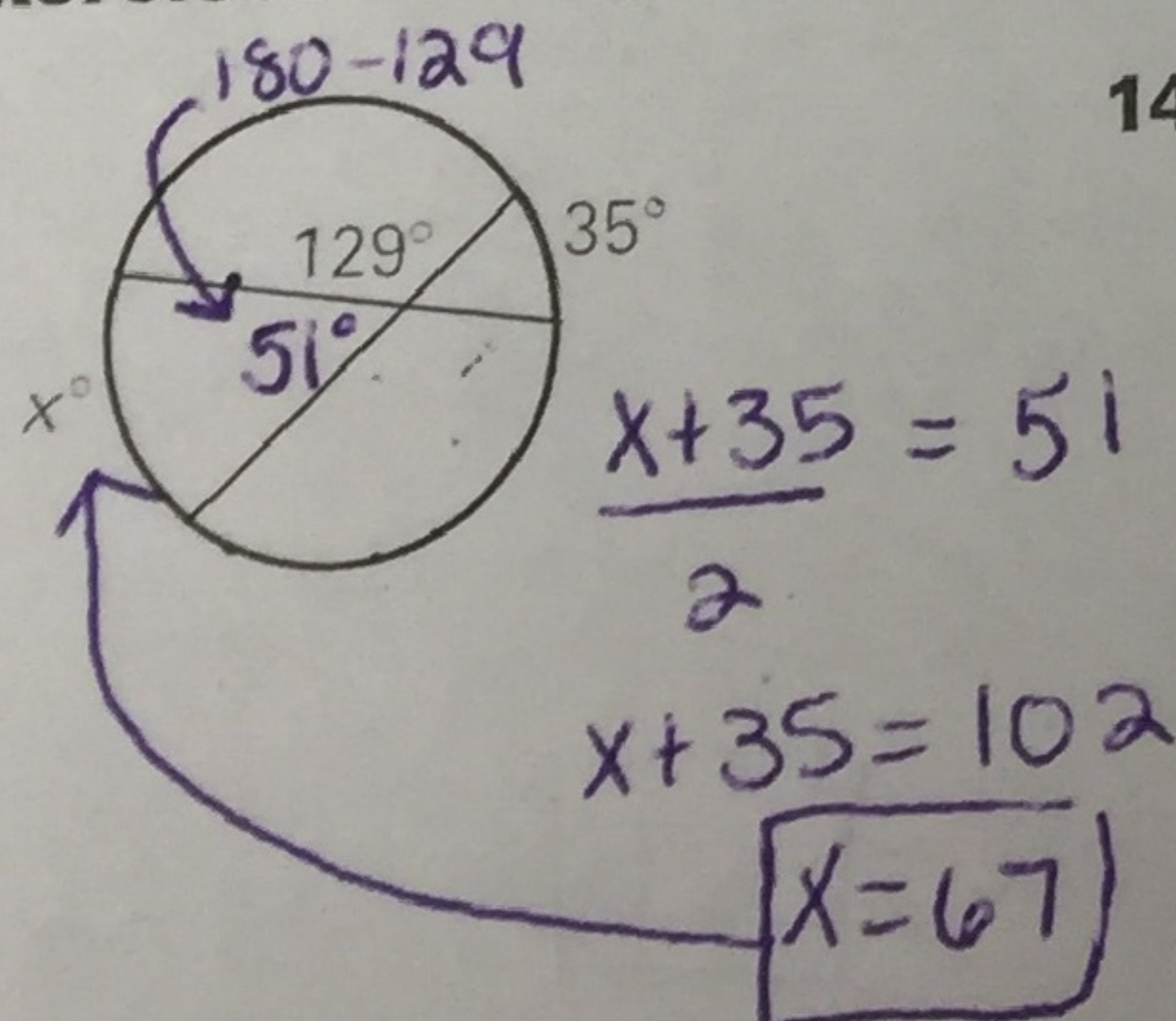
12.



$\frac{111 - 41}{2} = 35^\circ$
 $360 - 104 - 104 - 111 = 41$

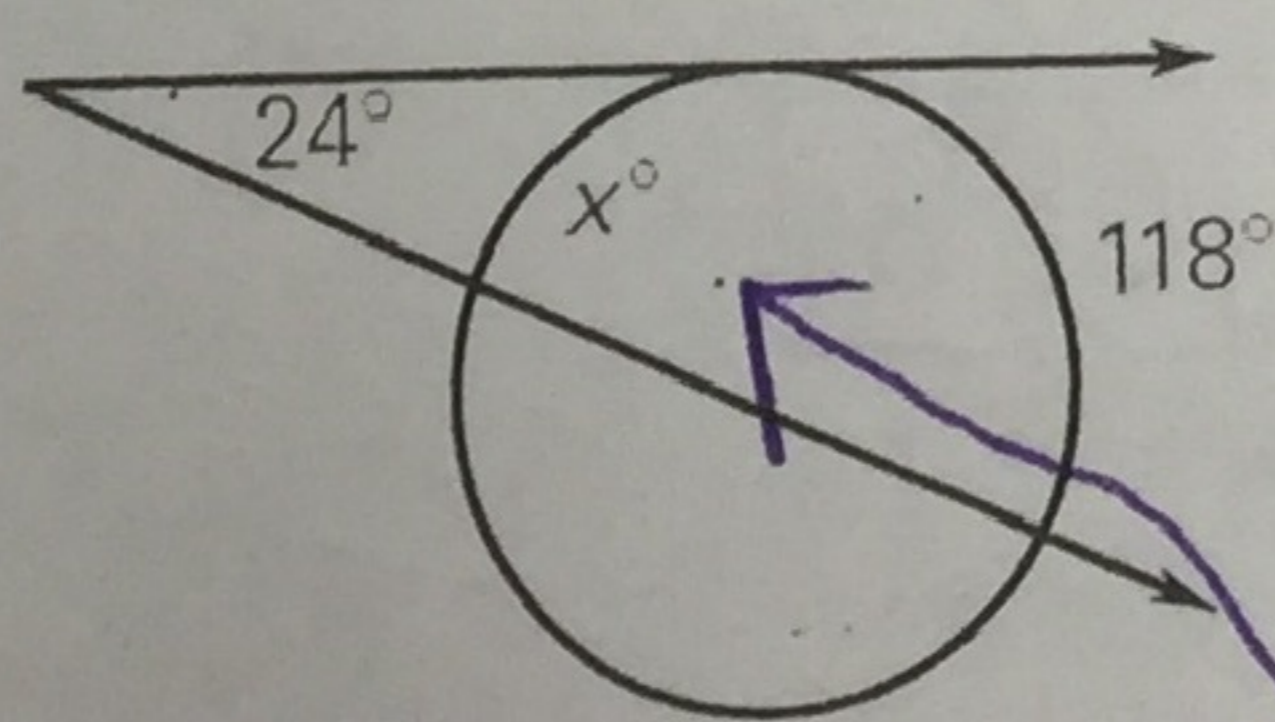
In Exercises 13-15, find the value of x .

13.



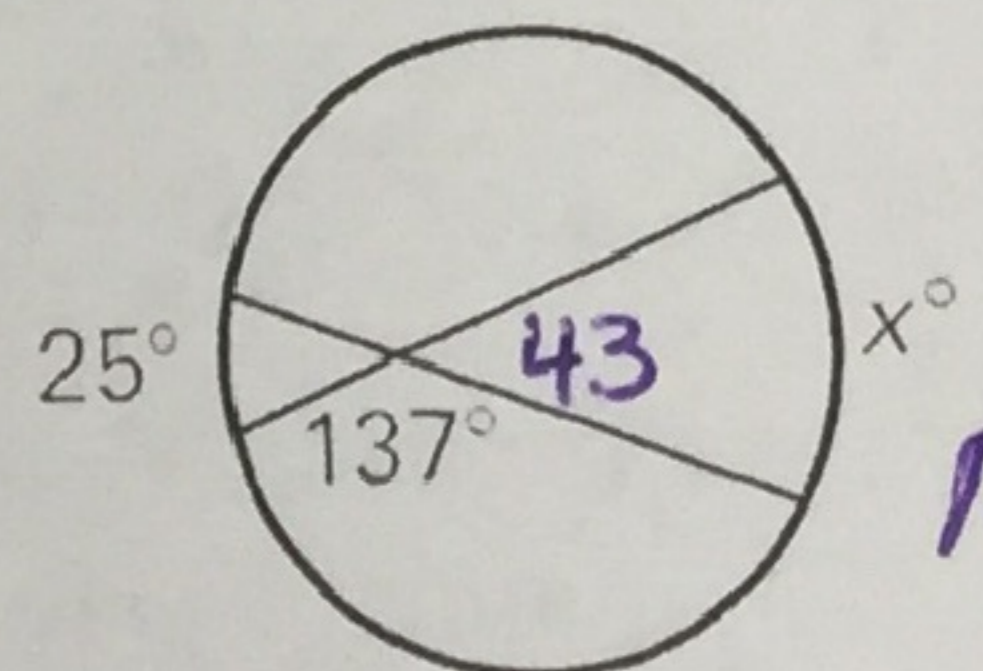
$\frac{x + 35}{2} = 51$
 $x + 35 = 102$
 $x = 67$

14.



$\frac{118 - x}{2} = 24$
 $118 - x = 48$
 $-x = -70$
 $x = 70$

15.

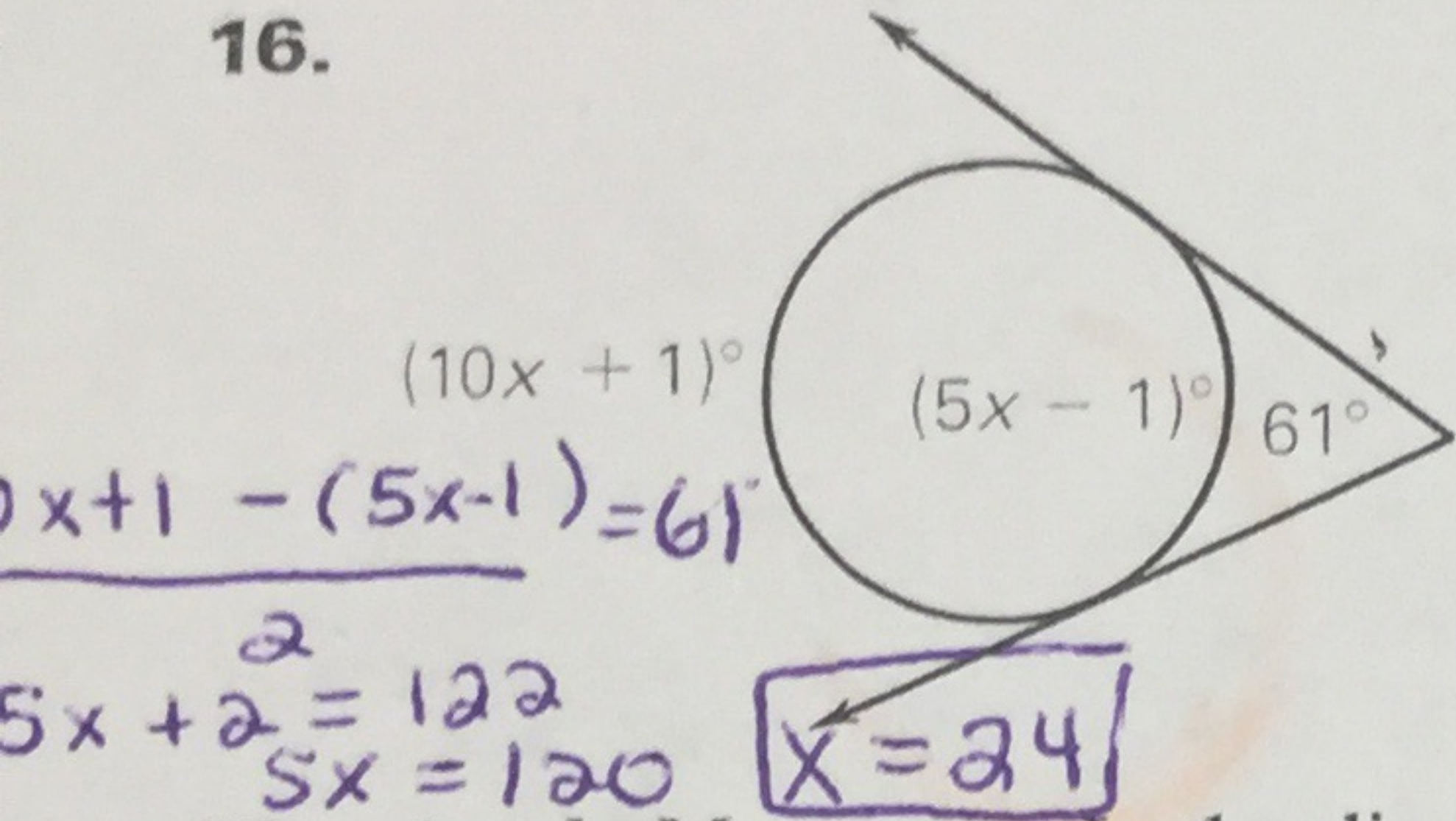


$\frac{x + 25}{2} = 43$
 $x + 25 = 86$
 $x = 61$

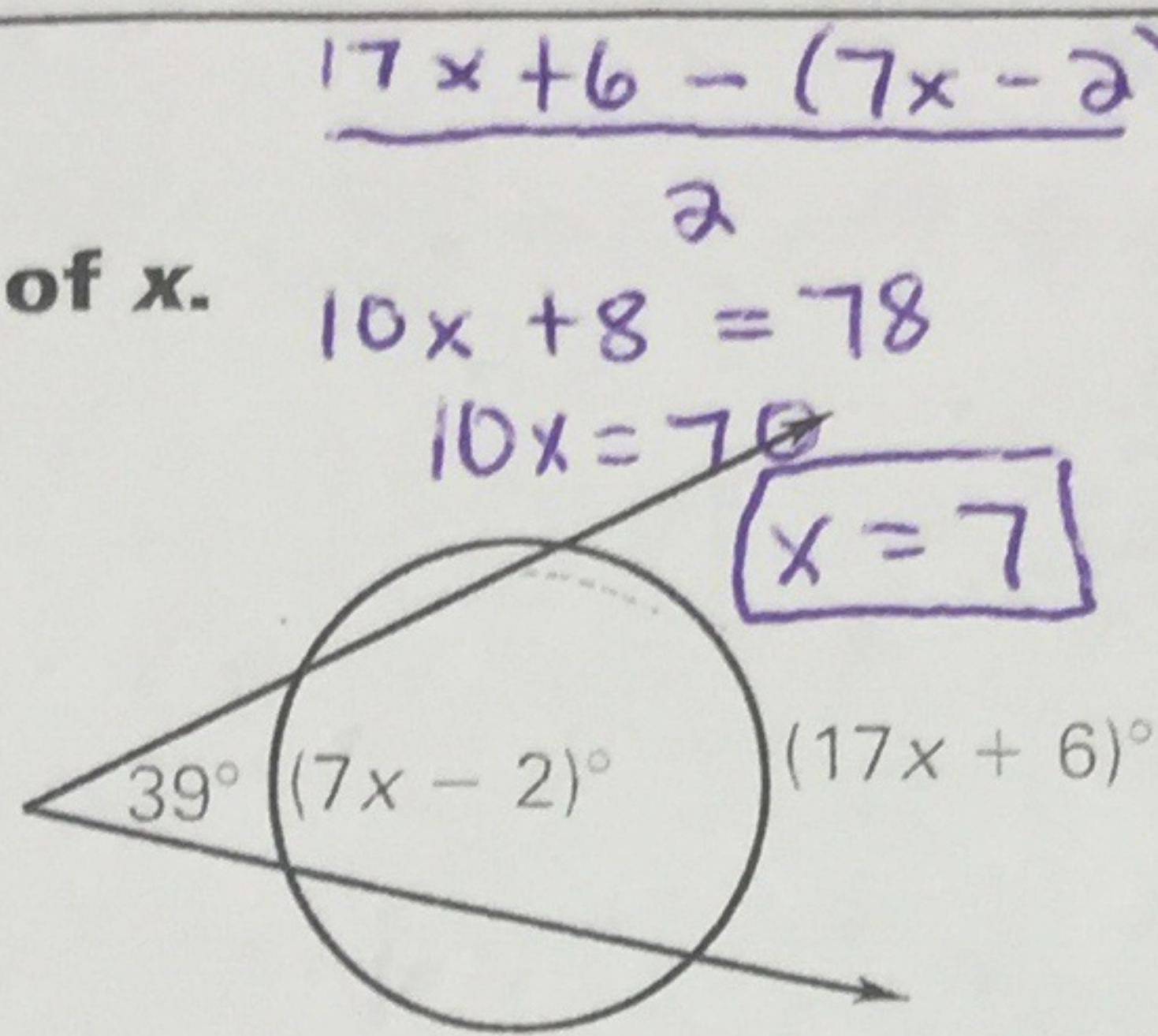
Exercise Set A (continued)

In Exercises 16–18, find the value of x .

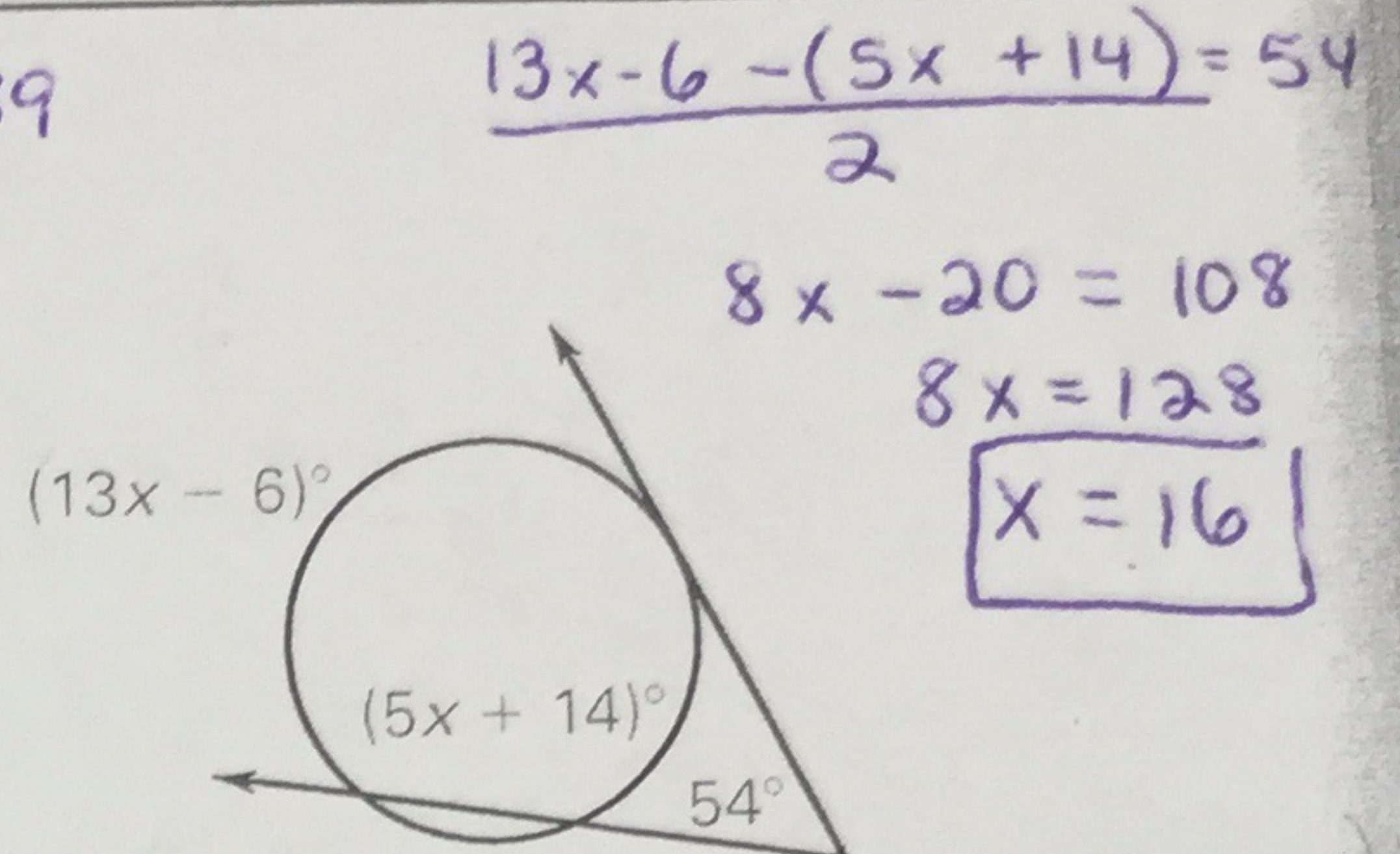
16.



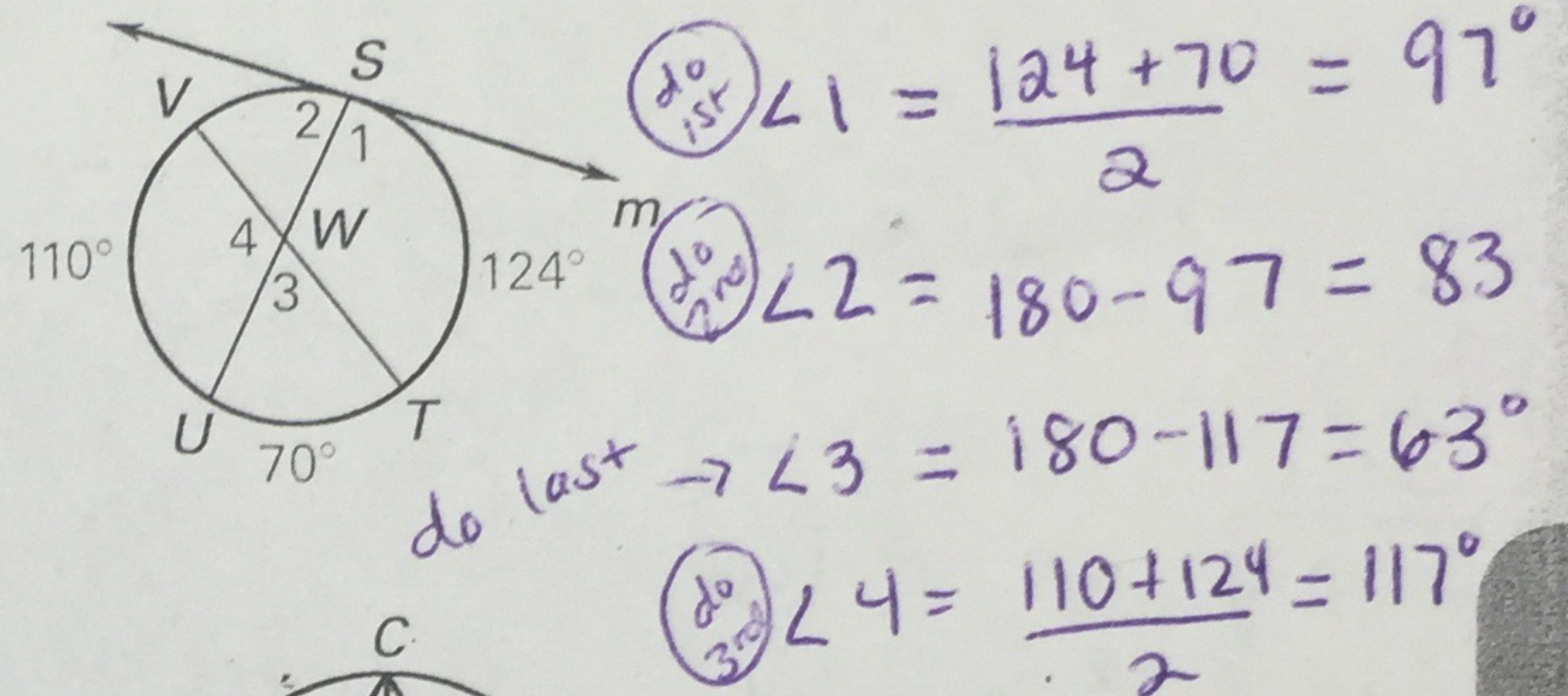
17.



18.

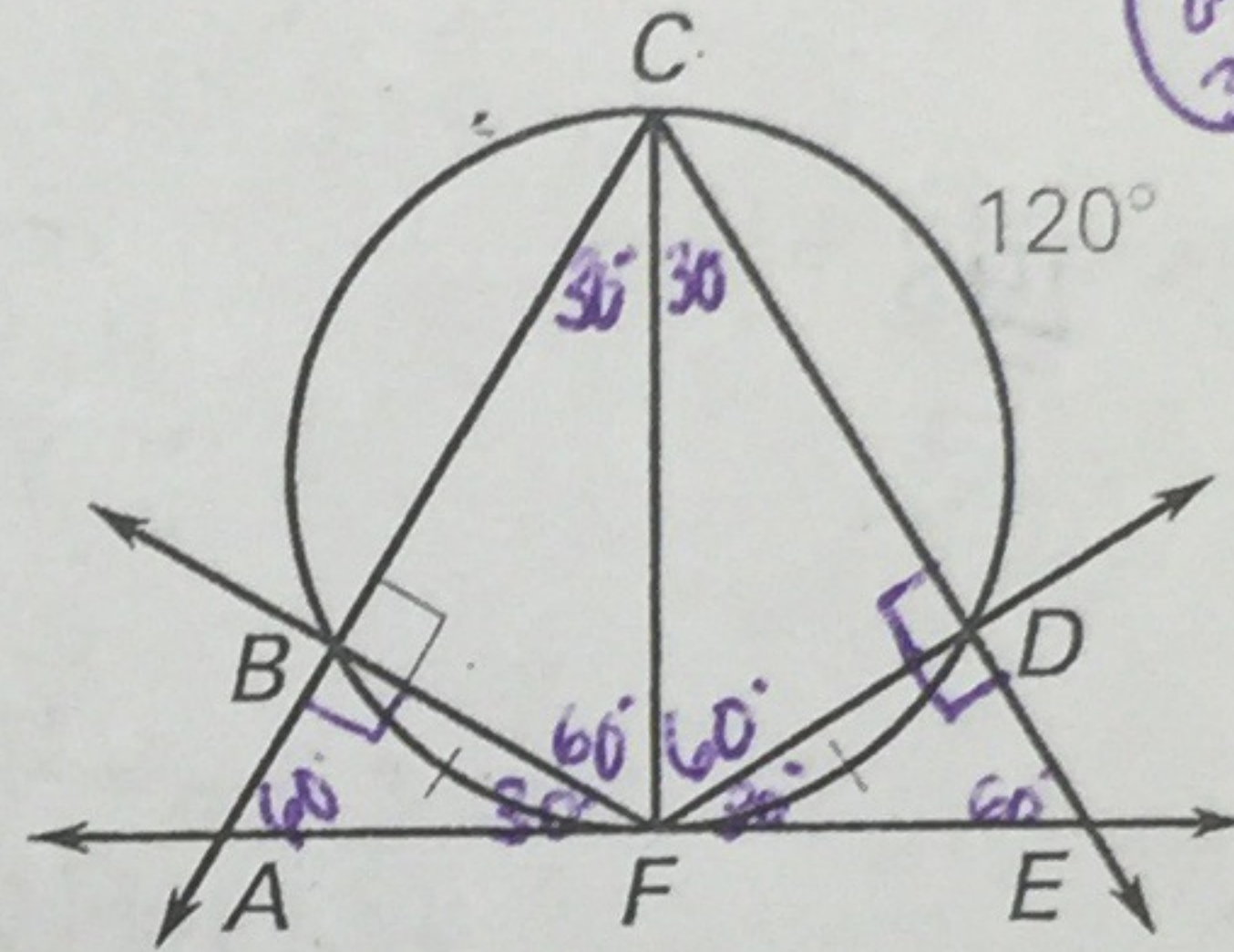


19. **Angle Measures** In the diagram shown, m is tangent to the circle at the point S . Find the measures of all the numbered angles.



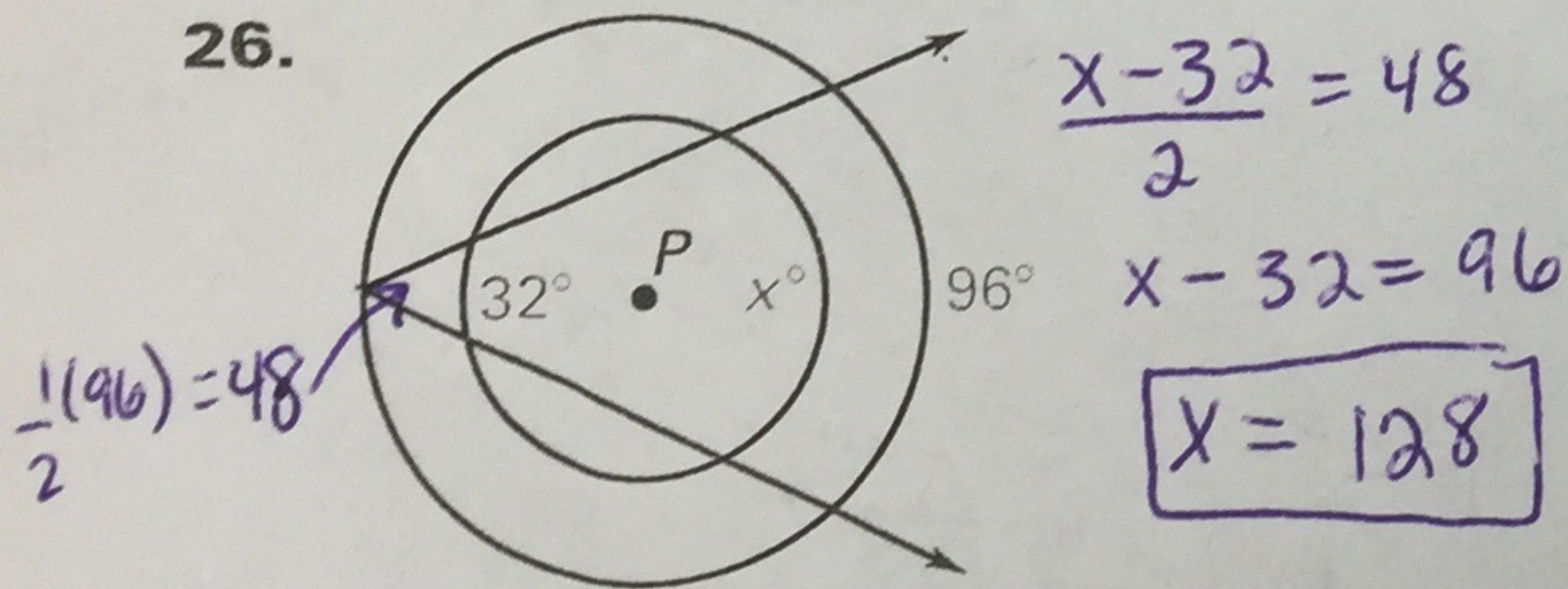
Use the diagram shown to find the measure of the angle.

20. $m\angle CAF = 60^\circ$ 21. $m\angle AFB = 30^\circ$
22. $m\angle CEF = 60^\circ$ 23. $m\angle CFB = 60^\circ$
24. $m\angle DCF = 30^\circ$ 25. $m\angle BCD = 60^\circ$

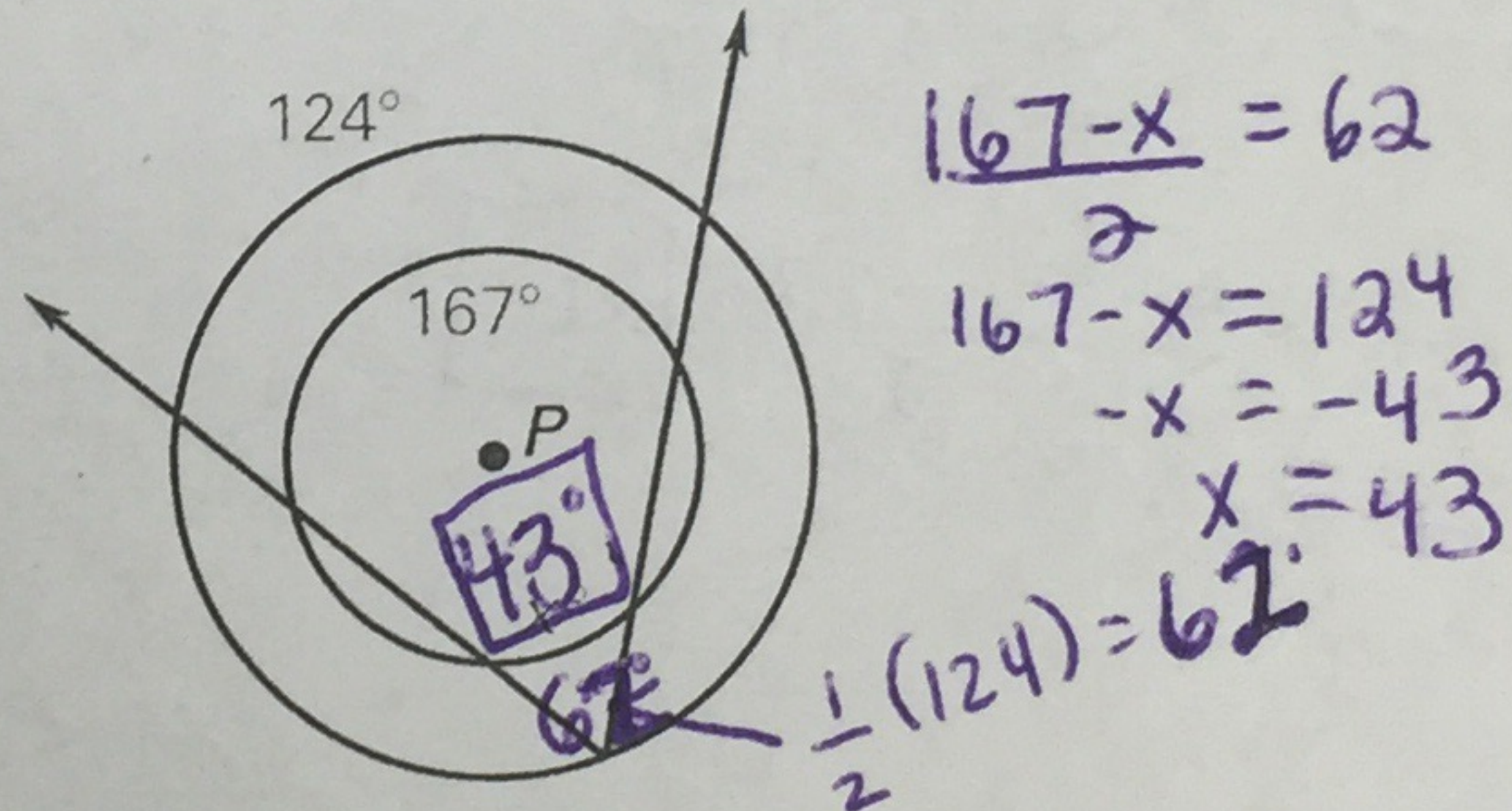


In Exercises 26 and 27, the circles have center P . Find the value of x .

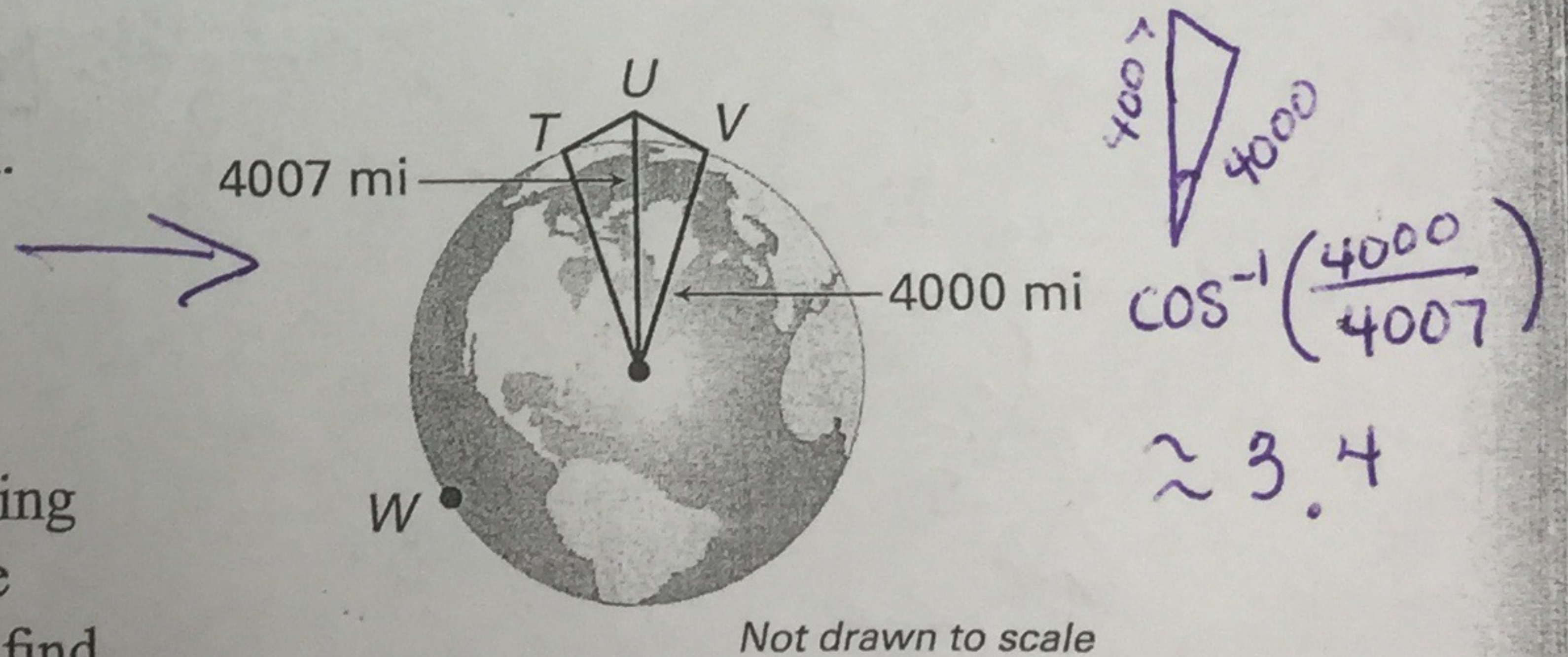
26.



27.



28. **Transportation** A plane is flying at an altitude of about 7 miles above Earth as shown in the diagram. What is the measure of arc TV that represents the part of Earth you can see? The radius of Earth is about 4000 miles. $3.4 \times 2 = 6.8$



29. **Mountain Climbing** A mountain climber is standing on top of a mountain that is about 4.75 miles above sea level. Use the information from Exercise 28 to find the measure of the arc that represents the part of Earth the mountain climber can see. $\cos^{-1}\left(\frac{4000}{4004.5}\right) \approx 2.8 \times 2 \approx 5.6$

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