Homework 8.3: Inscribed Angles
Math 3

Directions: Find the value of each variable. For each circle, the dot represents the center.

1. \( \alpha = 21^\circ \)
   \( \beta = 42^\circ \)
   \( \gamma = 117^\circ \)

2. \( \alpha = 34^\circ \)

3. \( \alpha = 72^\circ \)
   \( \beta = 88^\circ \)
   \( \gamma = 74^\circ \)

4. \( \alpha = 38^\circ \)
   \( \beta = 39^\circ \)

5. \( \alpha = 58^\circ \)
   \( \beta = 90^\circ \)
   \( \gamma = 20^\circ \)

6. \( \alpha = 93^\circ \)
   \( \beta = 120^\circ \)
   \( \gamma = 150^\circ \)

Directions: Find the value of each variable. Lines that appear to be tangent are tangent.

7. \( \alpha = 128^\circ \)

8. \( \alpha = 108^\circ \)
   \( \beta = 136^\circ \)

9. \( \alpha = 108^\circ \)
   \( \beta = 216^\circ \)

Directions: Find each indicated measure for \( \odot M \),

10. \( m\angle B = 86^\circ \)

11. \( m\angle C = 43^\circ \)

12. \( m\overline{BC} = 102^\circ \)

13. \( m\overline{AC} = 172^\circ \)

Directions: Find the value of each variable. For each circle, the dot represents the center.

14. \( \alpha = 84^\circ \)
    \( \beta = 28^\circ \)
    \( \gamma = 42^\circ \)

15. \( \alpha = 19^\circ \)
    \( \beta = 88^\circ \)
    \( \gamma = 176^\circ \)

16. \( \alpha = 35^\circ \)
    \( \beta = 55^\circ \)
    \( \gamma = 70^\circ \)
    \( \delta = 38^\circ \)
    \( \epsilon = 52^\circ \)
    \( \zeta = 76^\circ \)
Homework 8.4: Angles and Segments

Math 3

Directions: Solve for x.

1. \[ \frac{86 + 88}{2} \quad x = 87^\circ \]

2. \[ \frac{90 - 20}{2} \quad x = 35^\circ \]

3. \[ \frac{150 - 60}{2} = 45^\circ \]

Directions: Solve for each variable listed.

4. \[ \frac{120 - 60}{2} = 30^\circ \]

5. \[ \frac{360 - 38}{2} \quad y = 110 \]

6. \[ \frac{360 - 2x}{2} \quad y = 111 \]

7. There is a circular cabinet in the dining room. Looking in from another room at point A, you estimate that you can see an arc of the cabinet of about $100^\circ$. What is the measure of $\angle A$ formed by the tangents to the cabinet?

8. \[ D = 12.5 \]

9. \[ 12(x + 12) = 24^2 \]
   \[ 12x + 144 = 576 \]
   \[ 12x = 432 \]
   \[ x = 36 \]

10. \[ (4y)(4) = 3x \]
    \[ 16 = 3x \]
    \[ D = 8.3 \]

Directions: $\overline{CA}$ and $\overline{CB}$ are tangents to $\odot O$. Write an expression for each arc or angle in terms of the given variable.

11. $m\overline{AB}$ using $x$

12. $m\overline{AB}$ using $y$

13. $m\angle C$ using $x$

Skip!