Homework 8.3: Inscribed Angles

Math 3

Name: _____

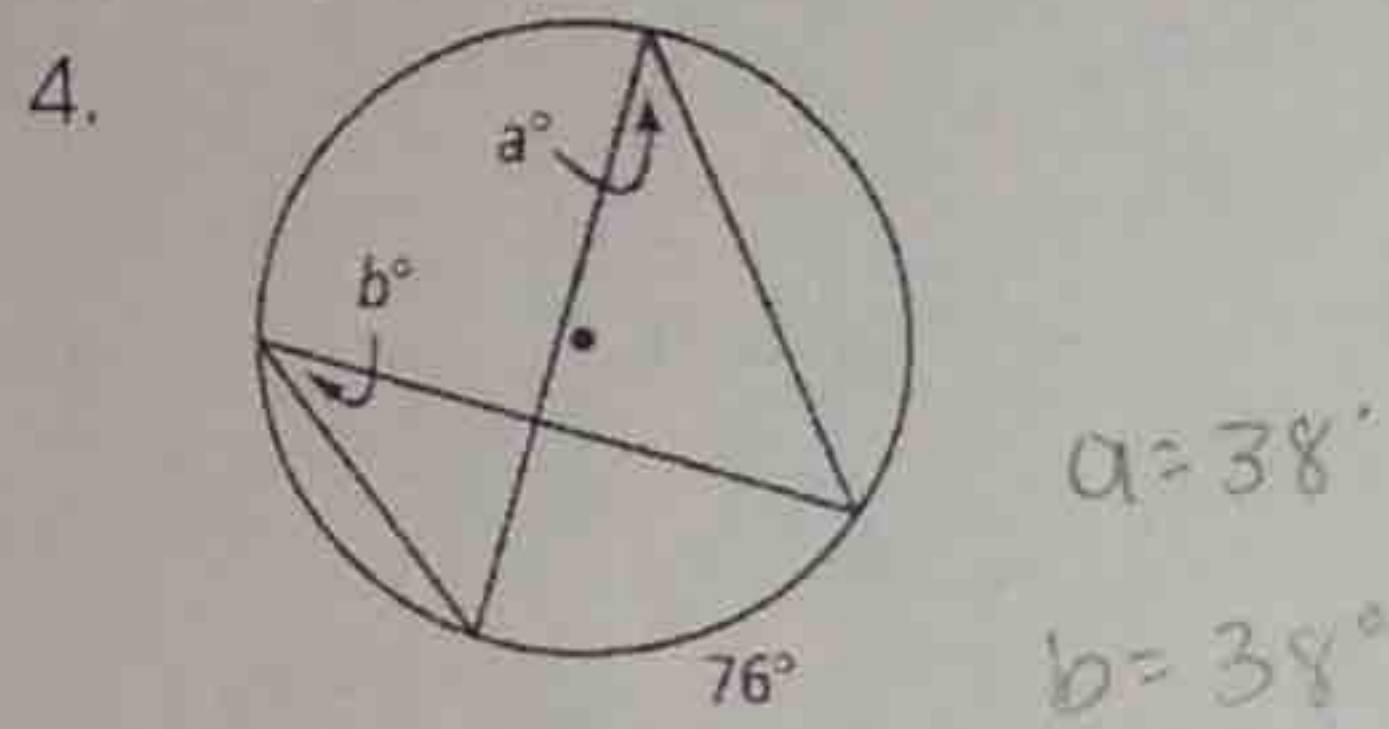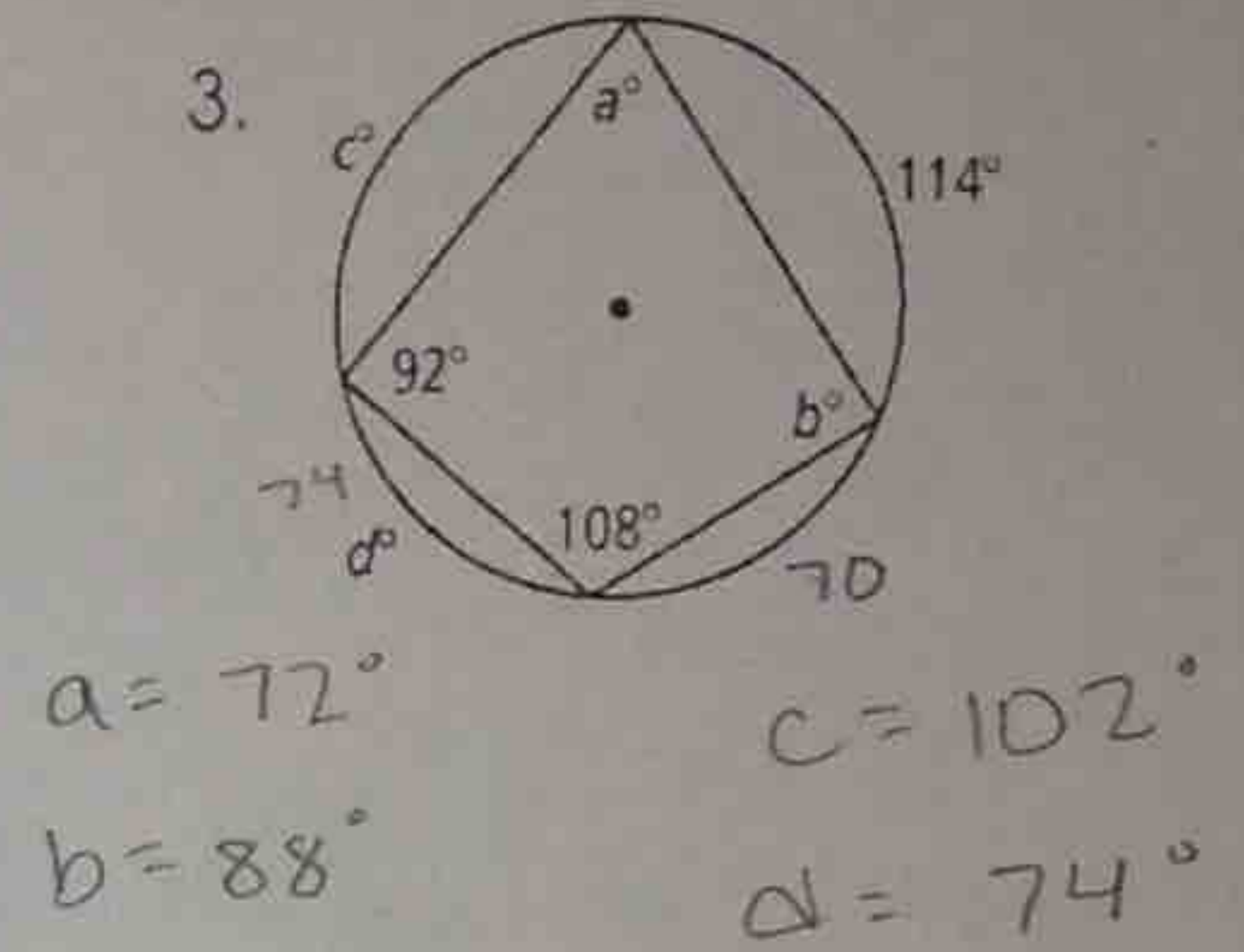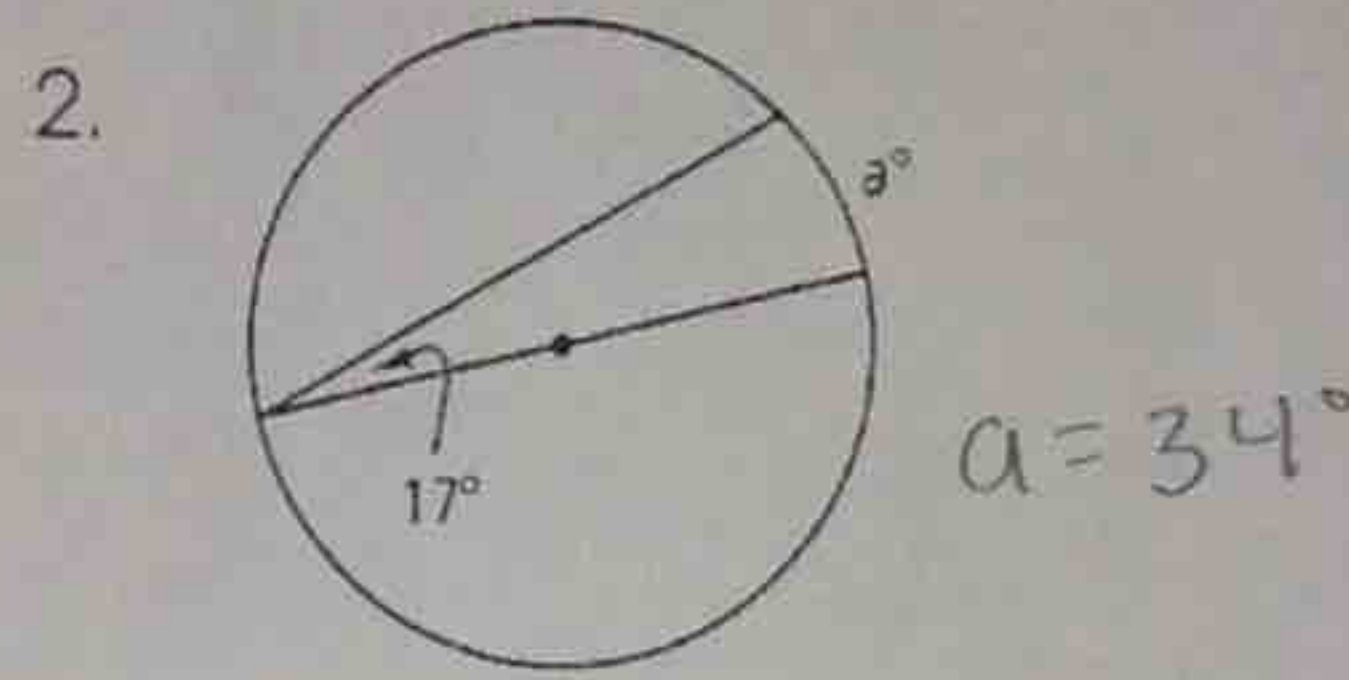**Directions:** Find the value of each variable. For each circle, the dot represents the center.

1.

$a = 21°$

$b = 42°$

$C = 117°$

2.

$a = 34°$

3.

$a = 72°$

$b = 88°$

$C = 102°$

$d = 74°$

4.

$a = 38°$

$b = 38°$

5.

$a = 58°$

$b = 90°$ $C = 61°$

6.

$a = 93°$ $b = 120°$ $C = 150°$
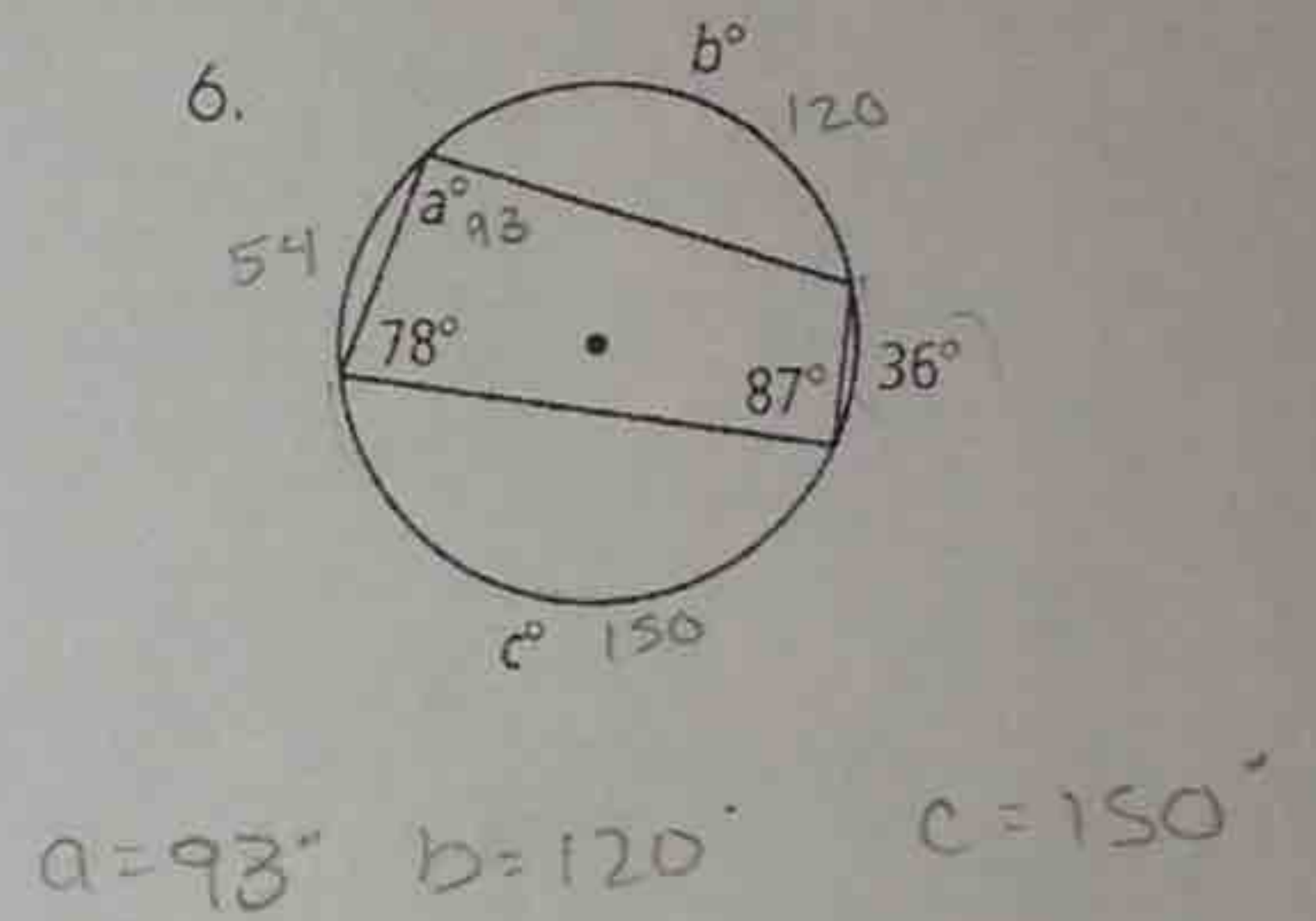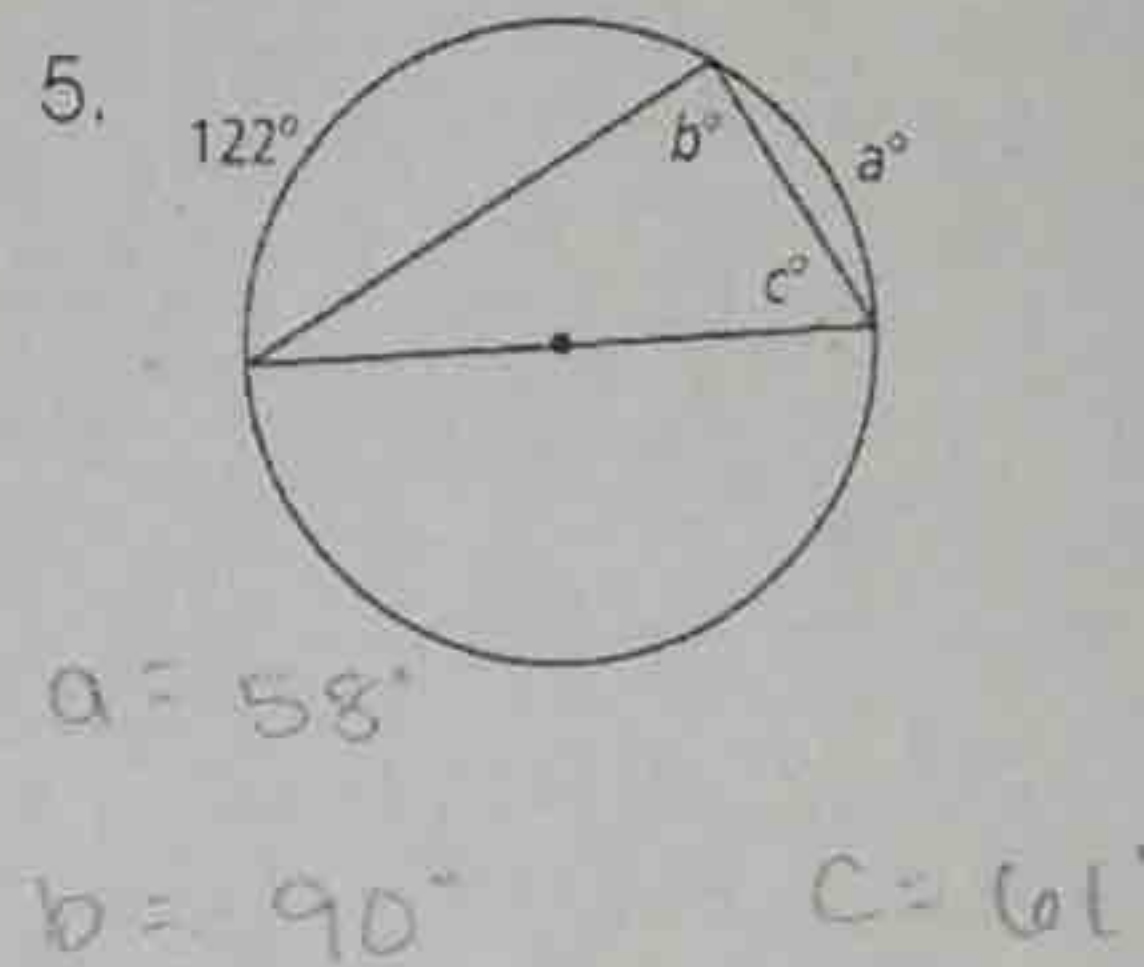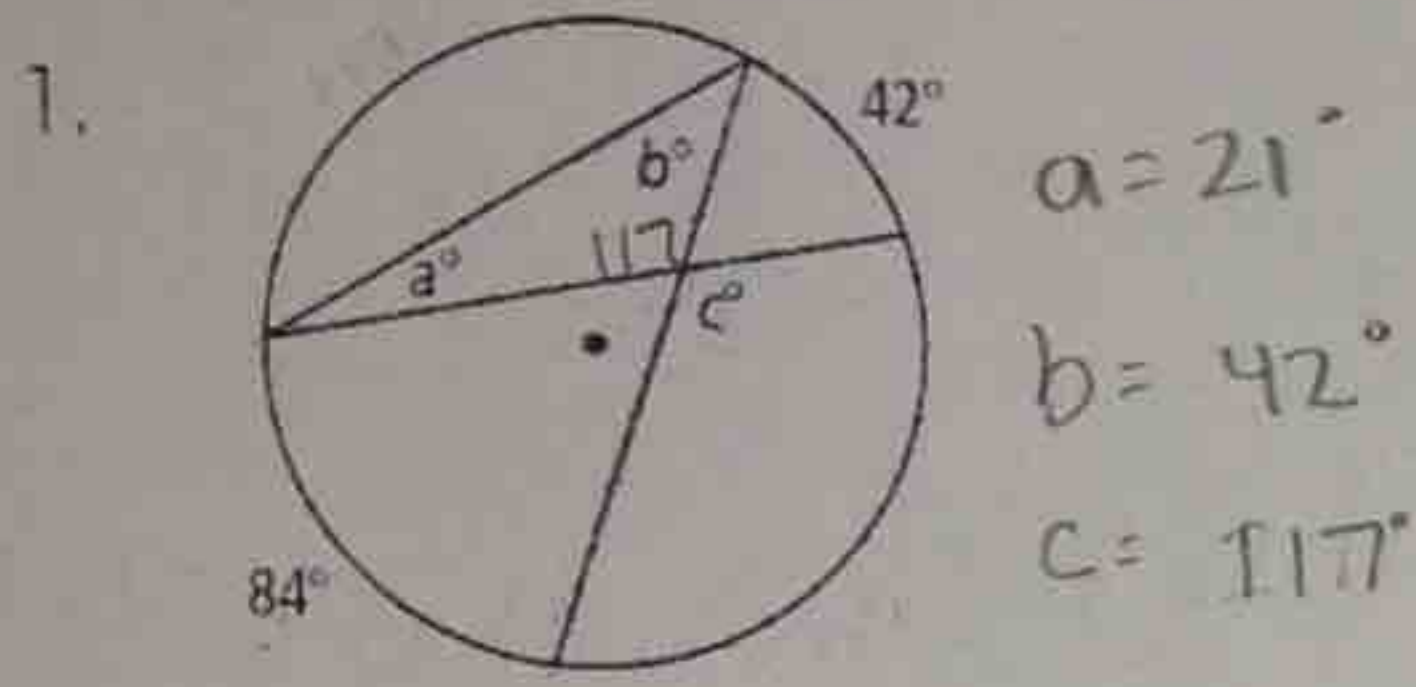
Directions: Find the value of each variable. Lines that appear to be tangent are tangent.

7.

256°

$a = 128°$

8.

224°

$a = 68°$ $b = 136°$

9.

144°

$a = 108°$ $b = 216°$
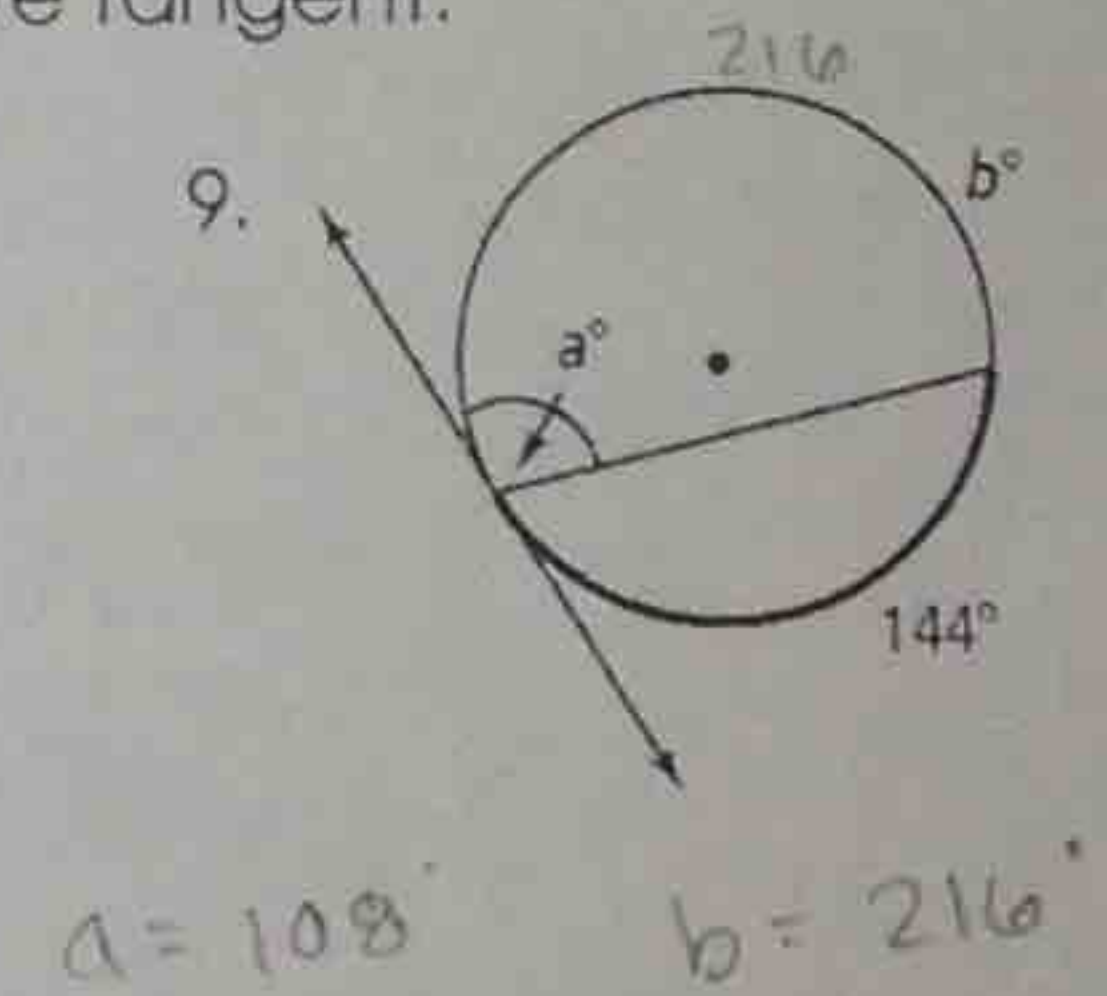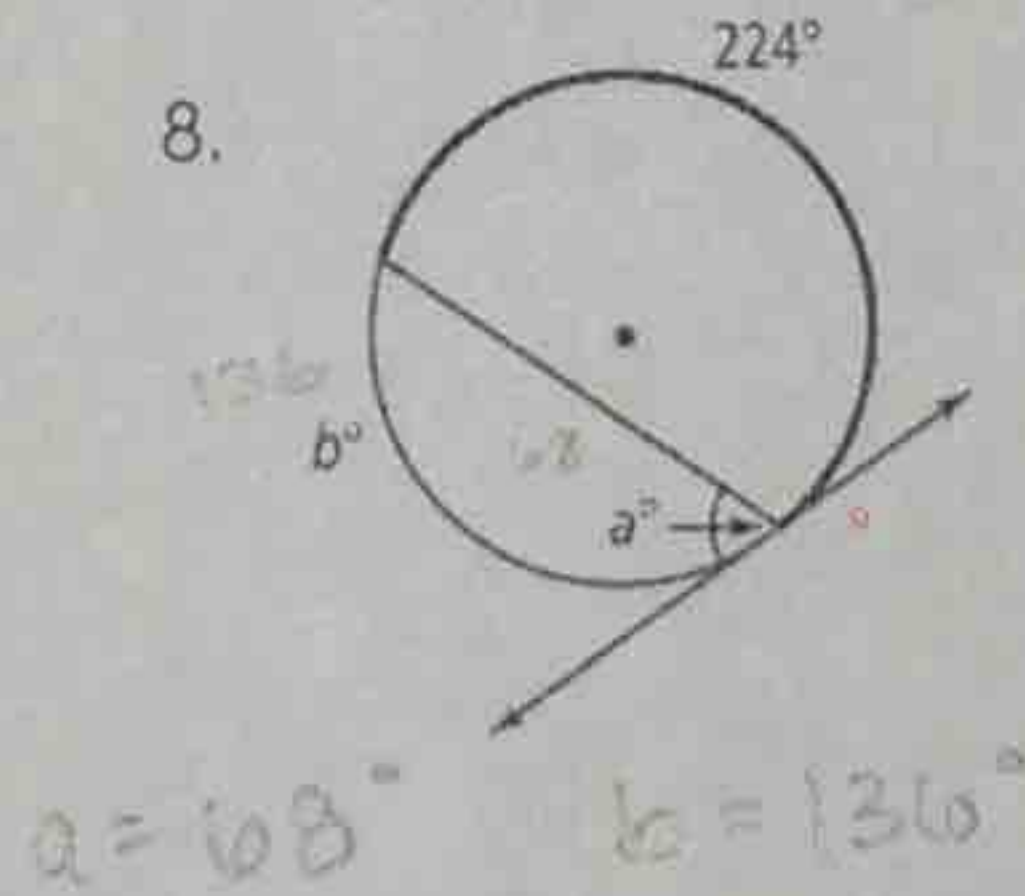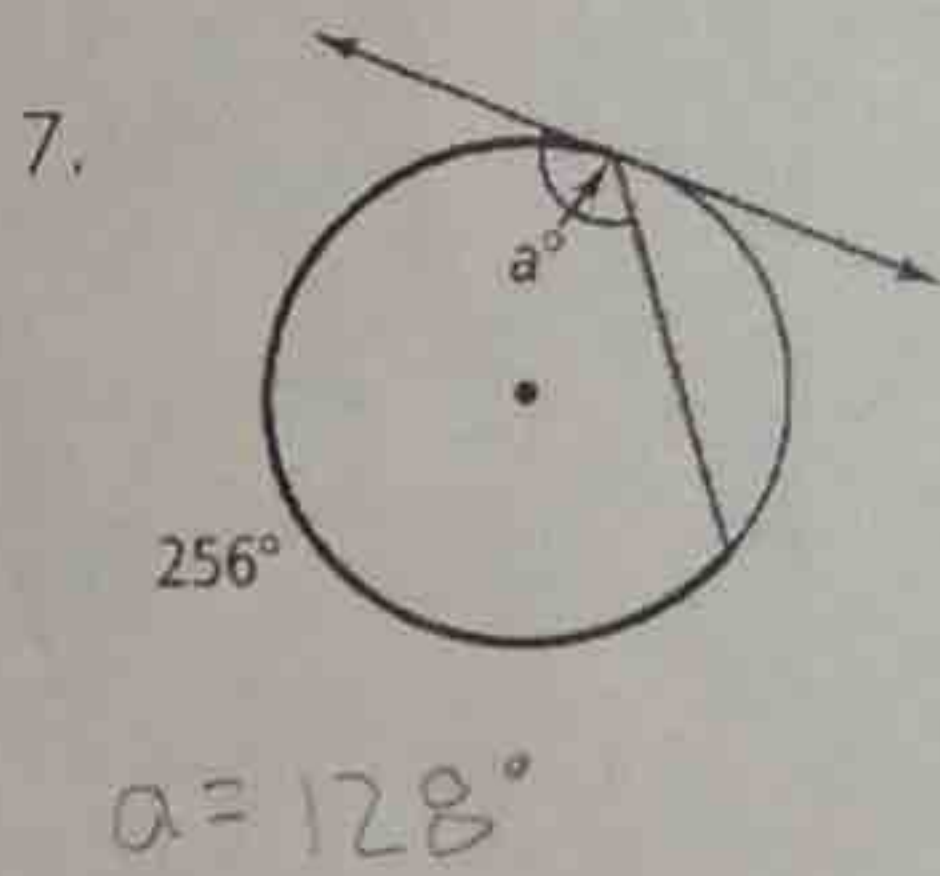
Directions: Find each indicated measure for ⊙M.
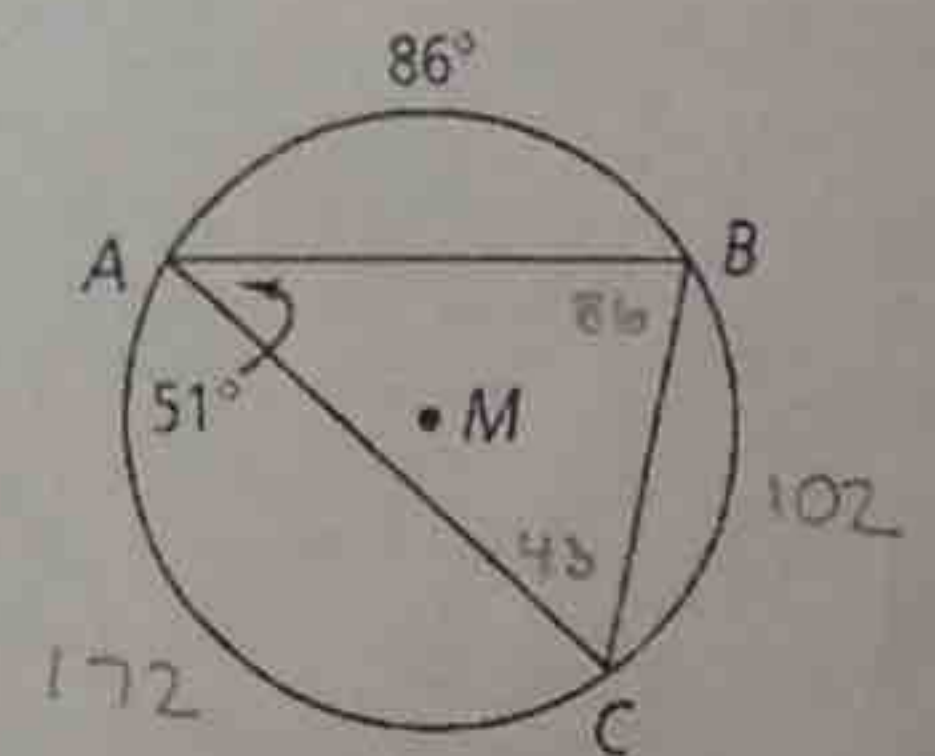
10. $m\angle B = 86°$

11. $m\angle C = 43°$

12. $m\overarc{BC} = 102°$

13. $m\overarc{AC} = 172°$

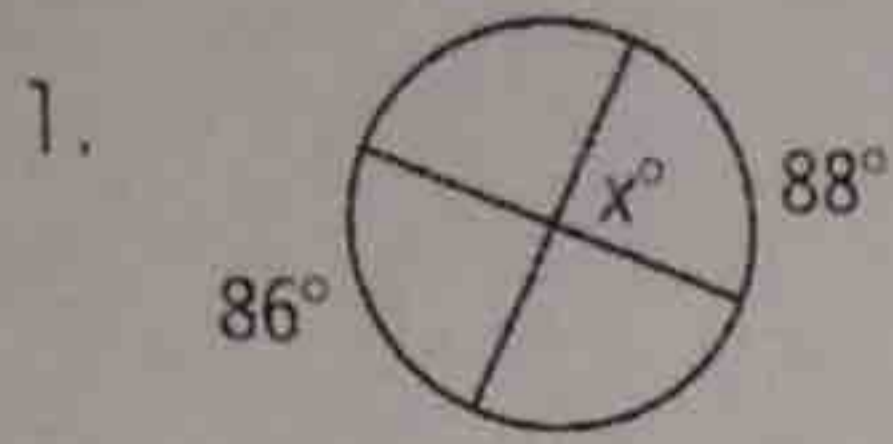**Directions:** Find the value of each variable. For each circle, the dot represents the center.

14.

56°

112°

$a = 34°$

$b = 28°$

$C = 62°$

15.

38°

146°

$a = 19°$

$b = 88°$

$C = 176°$

16.

110°

104°

76°

$a = 35°$

$b = 55°$

$C = 52°$

$d = 70°$

$e = 38°$
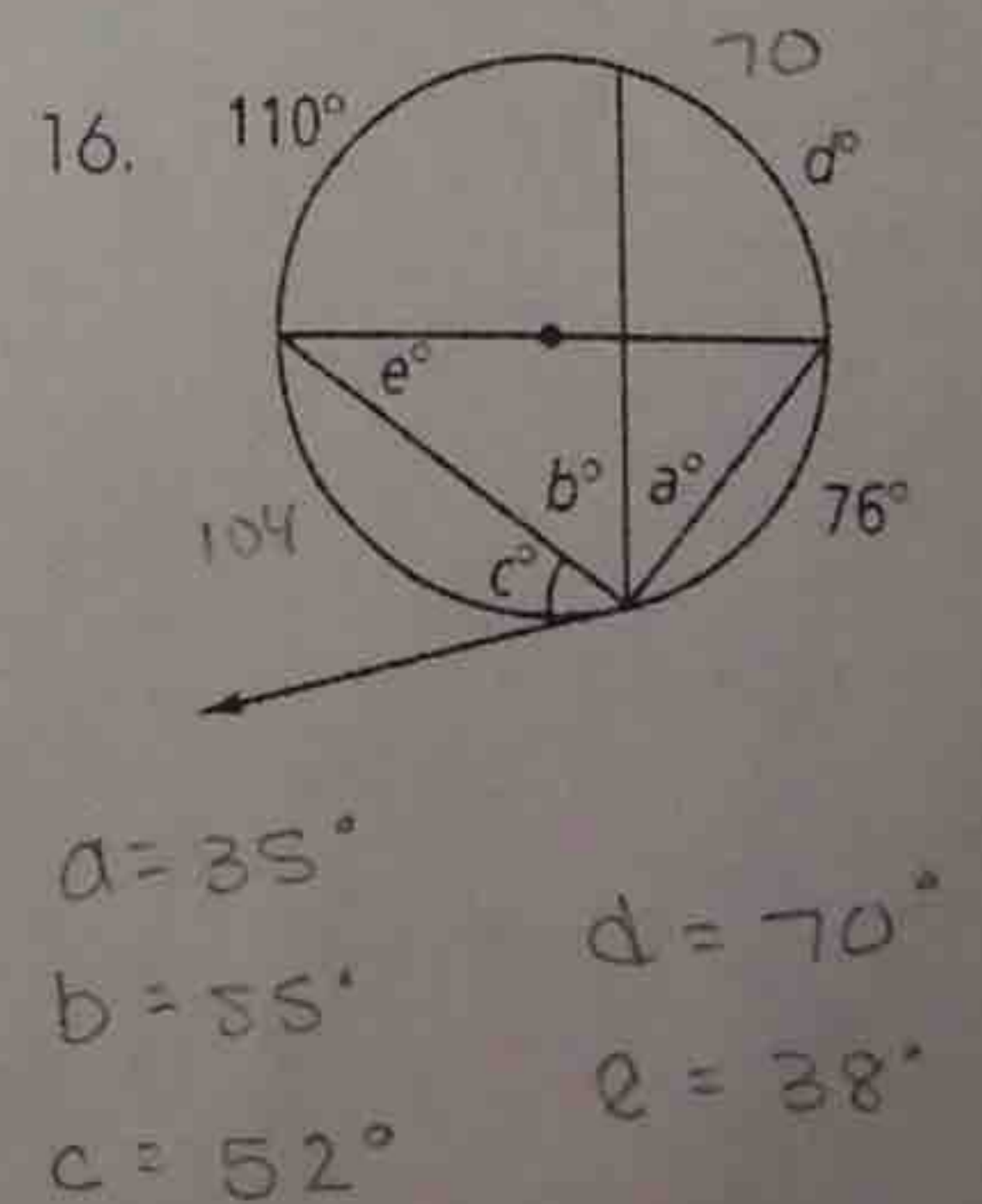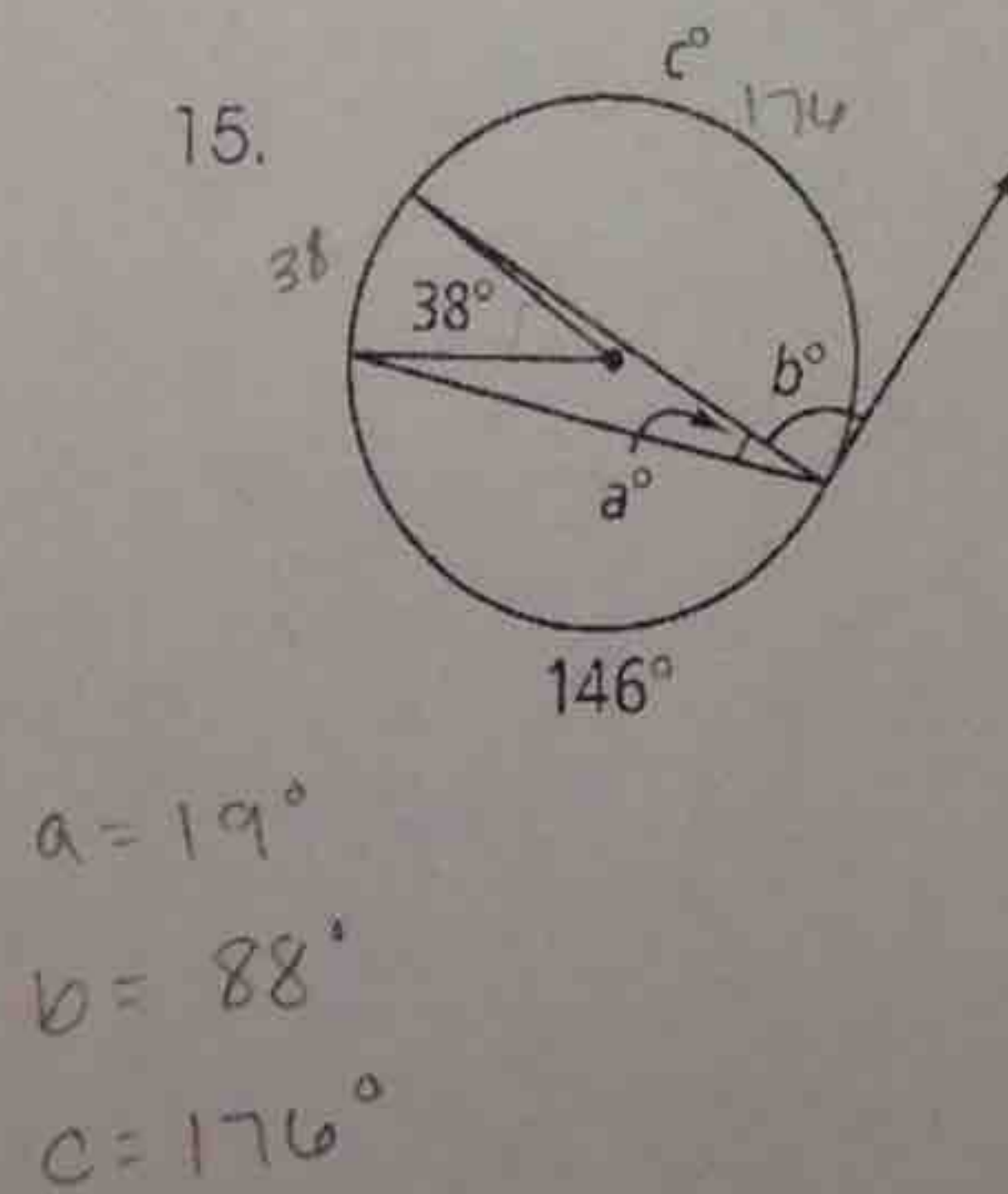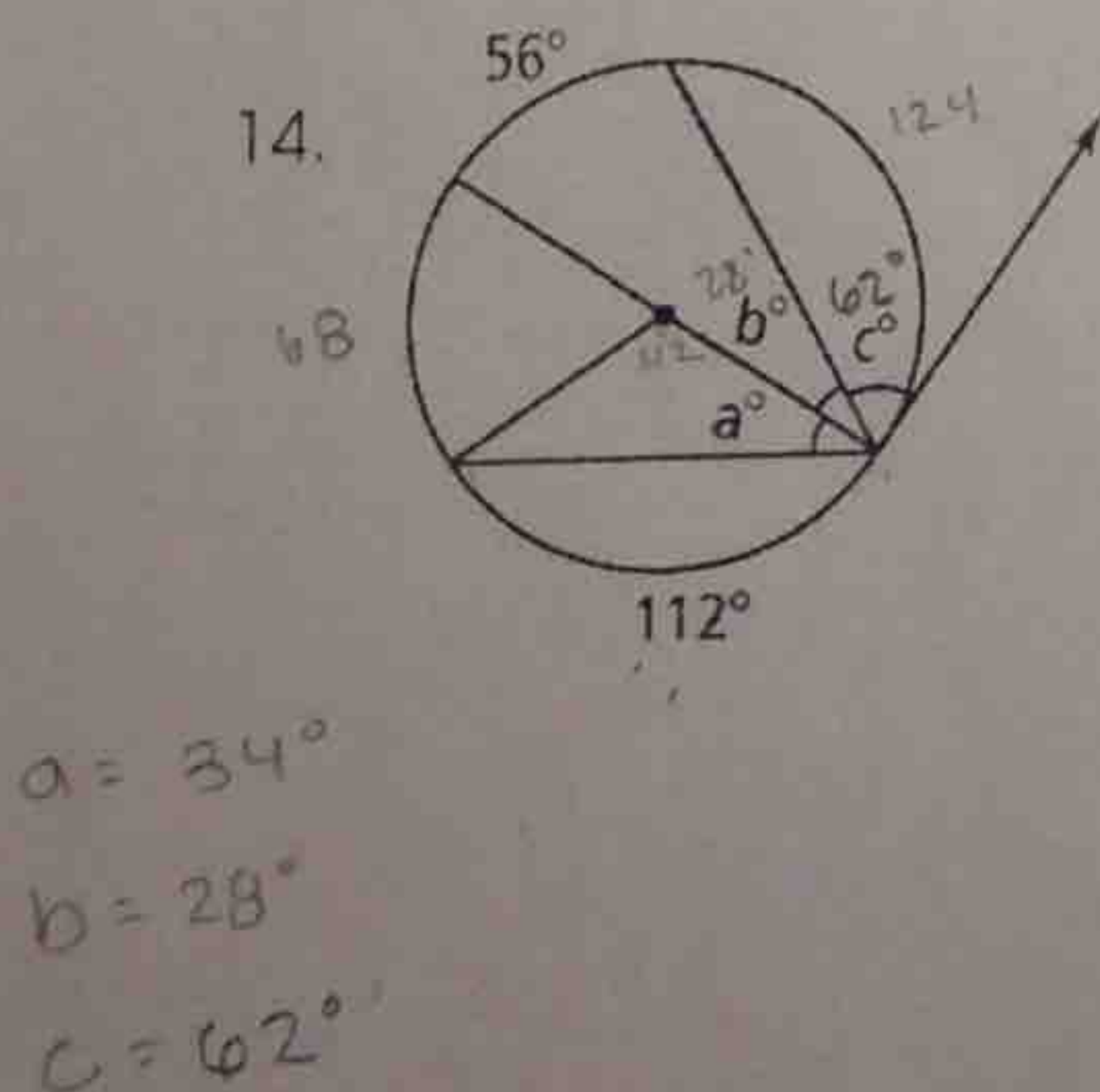
Homework 8.4: Angles and Segments

Name: _____

Math 3

Directions: Solve for x.

1.

88°

86°

$x = \dfrac{86 + 88}{2}$ $x = 87°$

2.

20°   90°

$x = \dfrac{90 - 20}{2}$ $x = 35$

3.

60°   150°
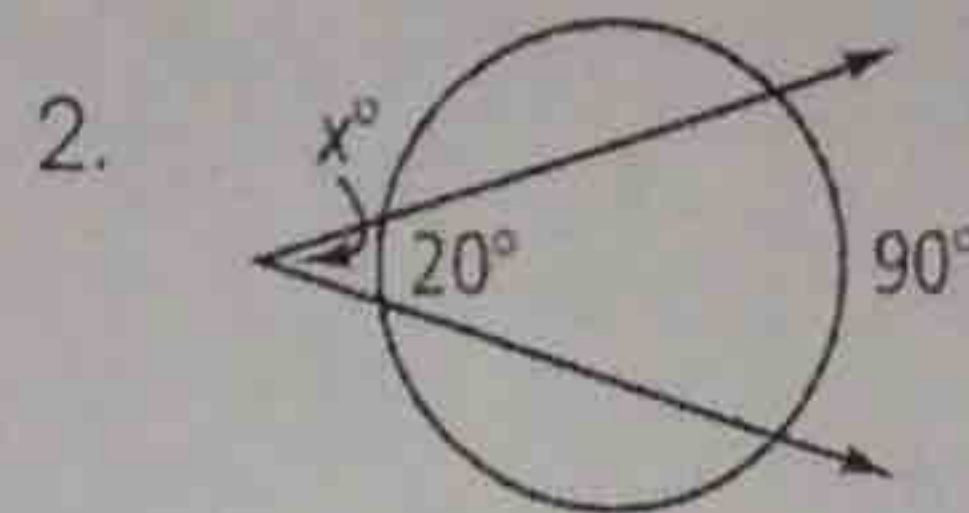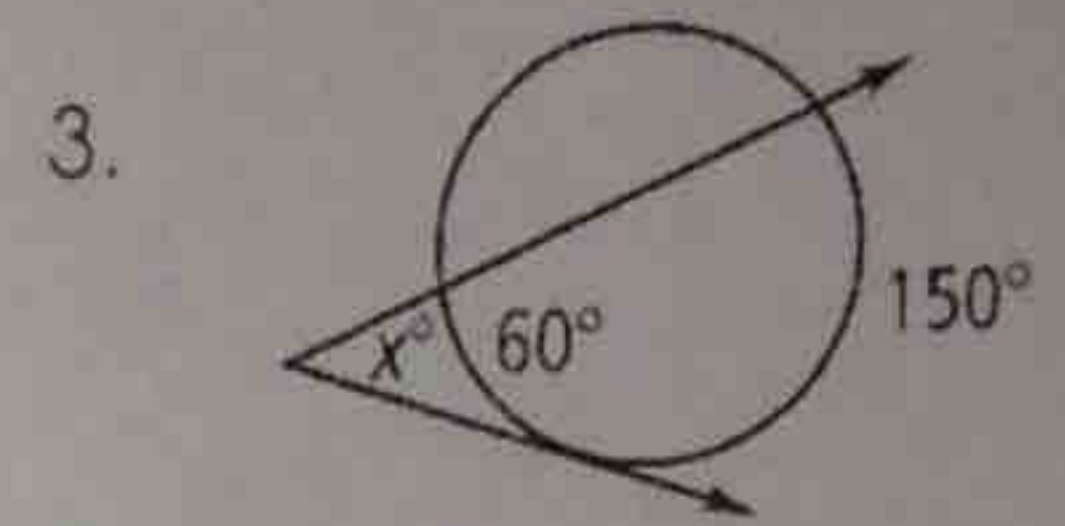
$x = \dfrac{150 - 60}{2} = 45°$

Directions: Solve for each variable listed.

4.

$y°$ $z°$ 120°

120°
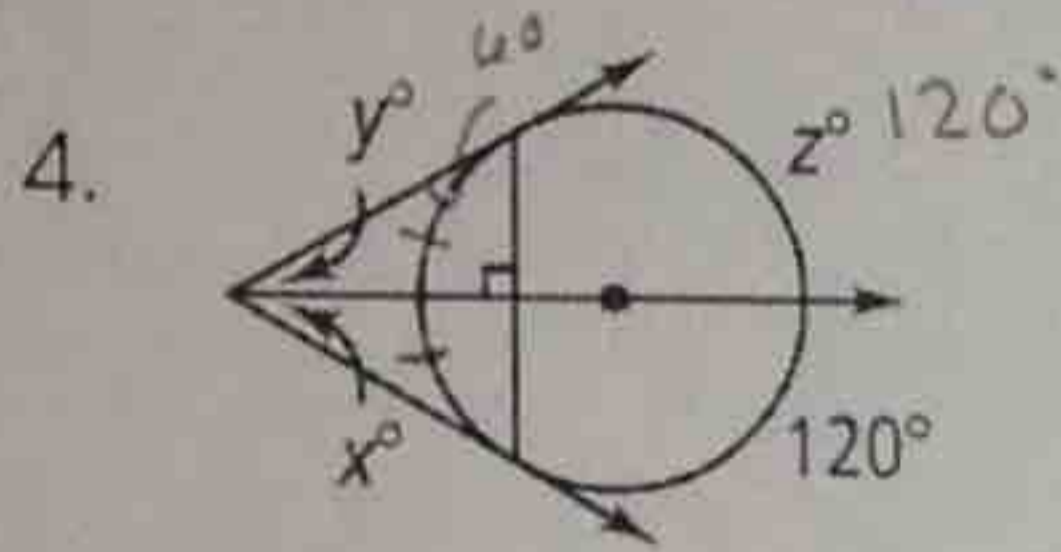
$x = \dfrac{120 - 60}{2} = 30°$

$y = \dfrac{120 - 60}{2} = 30°$

5.   42° $x°$ $z°$

$y°$ 69

69

$42 = \dfrac{(360 - x) - x}{2}$

$84 = 360 - 2x$

$2x = 276$

$x = 138°$

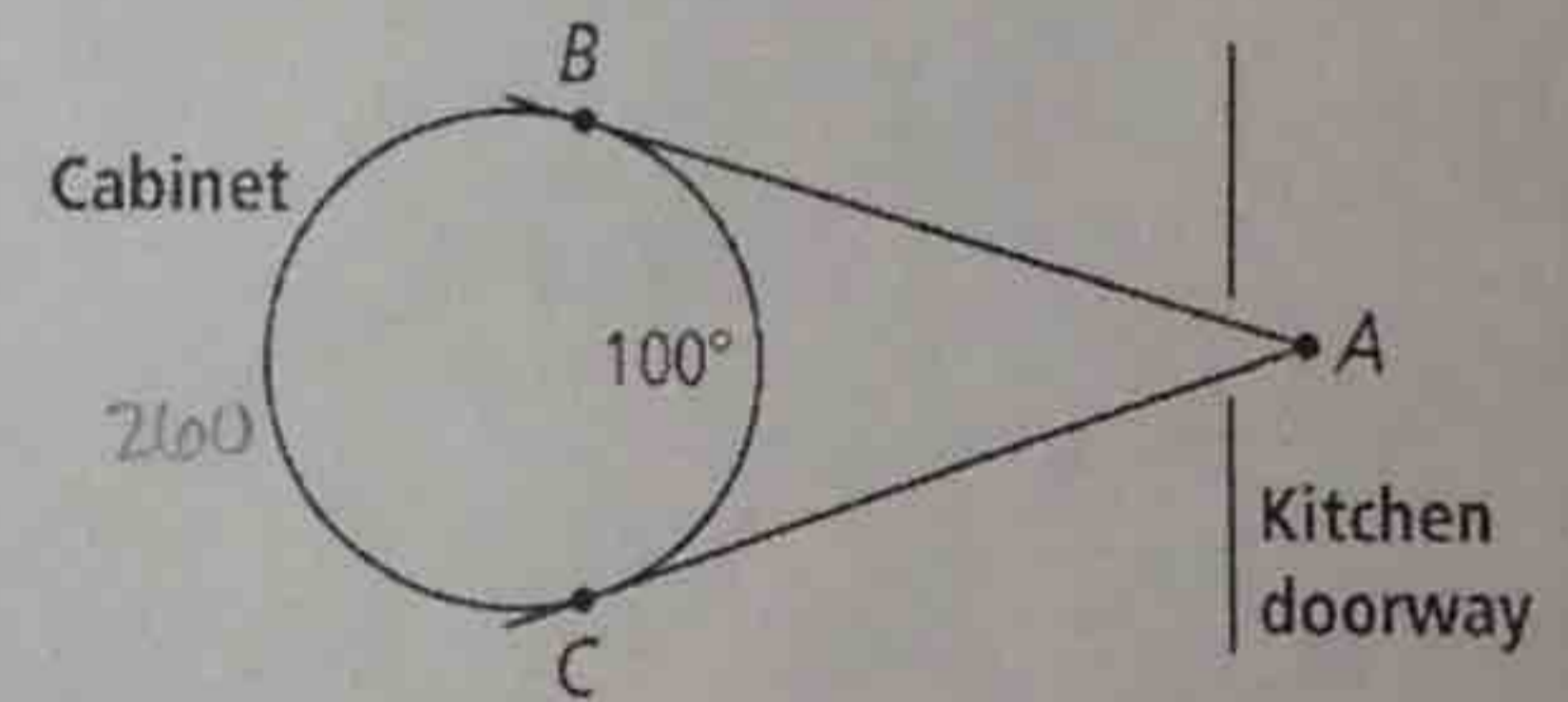$y = \dfrac{360 - 138}{2}$

$y = 111$

$z = 111$

6.

6° $x°$
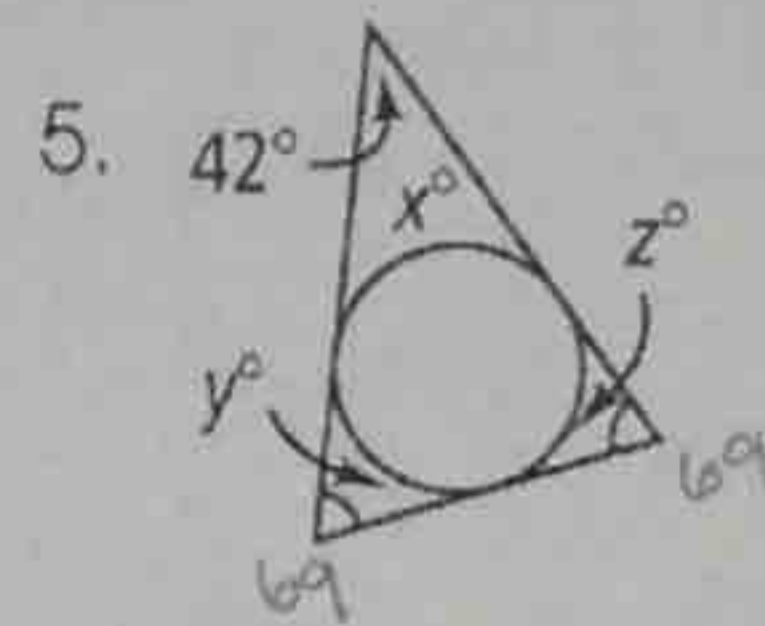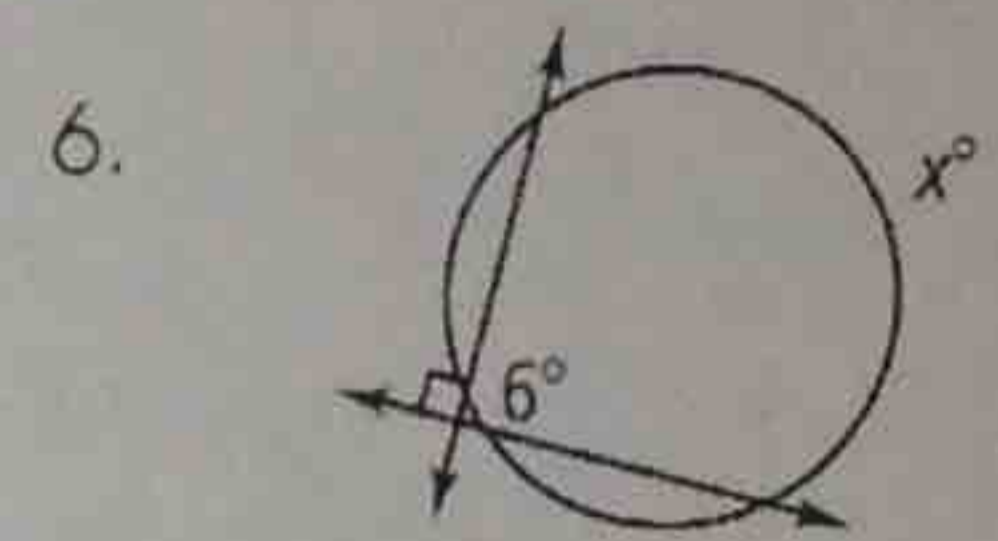
$\dfrac{x - 6}{2} = 90$

$x - 6 = 180$

$x = 186°$

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°. What is the measure of ∠A formed by the tangents to the cabinet?

$\angle A = 80°$

Cabinet

B

100°   A

260

C

Kitchen doorway

Directions: Find the diameter of ⊙O. A line that appears to be tangent is tangent. If your answer is not a whole number, round to the nearest tenth.

8.
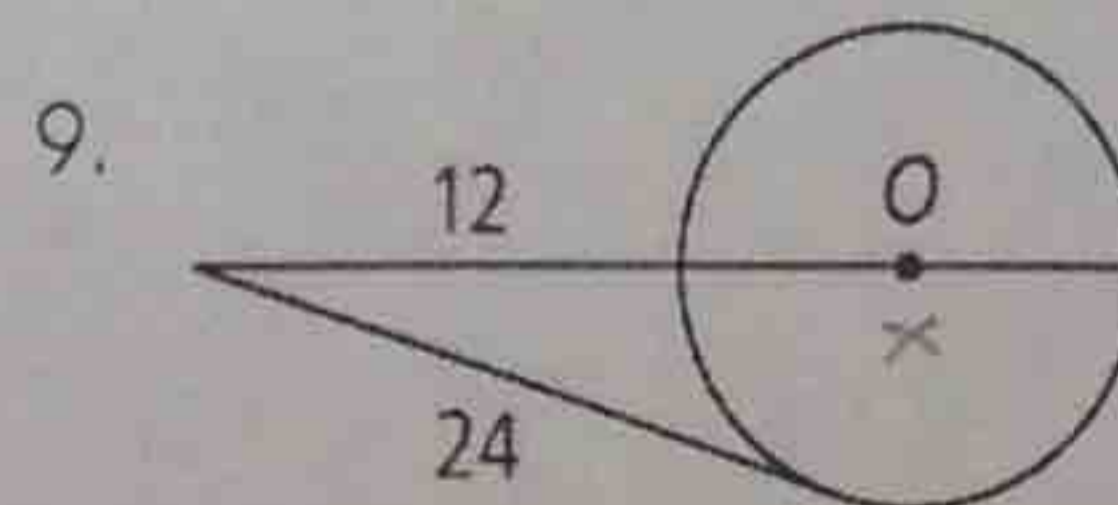
x   10

O   6

y
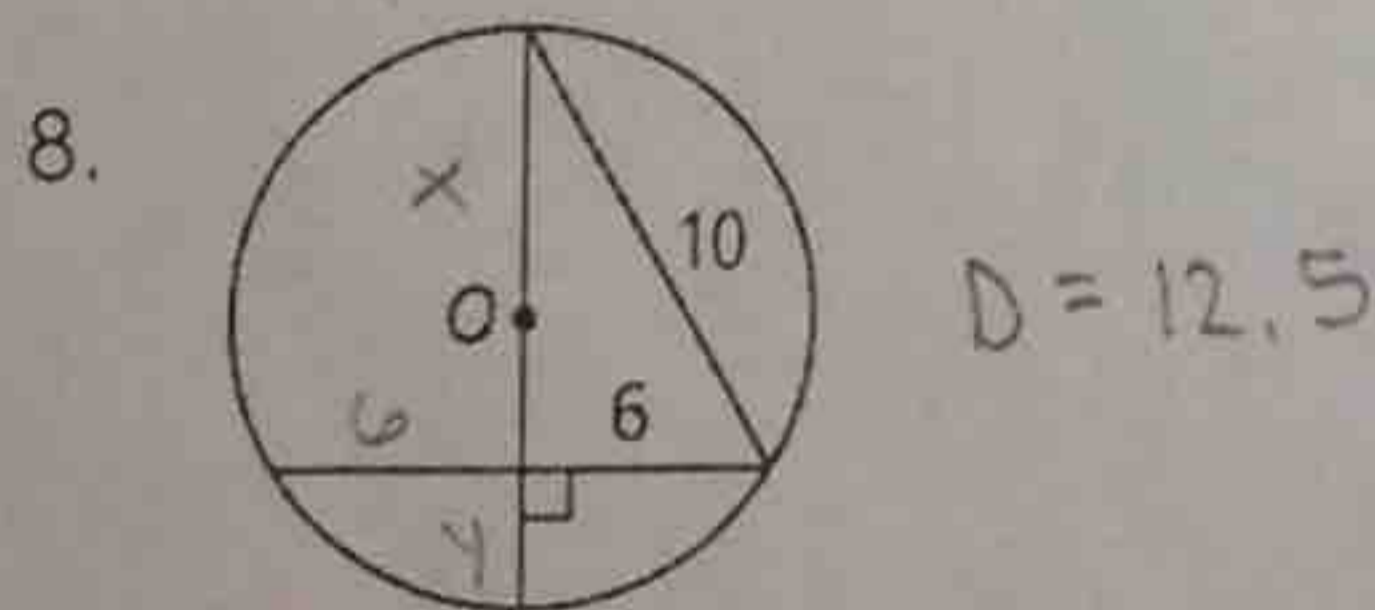
$x^2 + 6^2 = 10^2$

$x^2 = 64$

$x = 8$
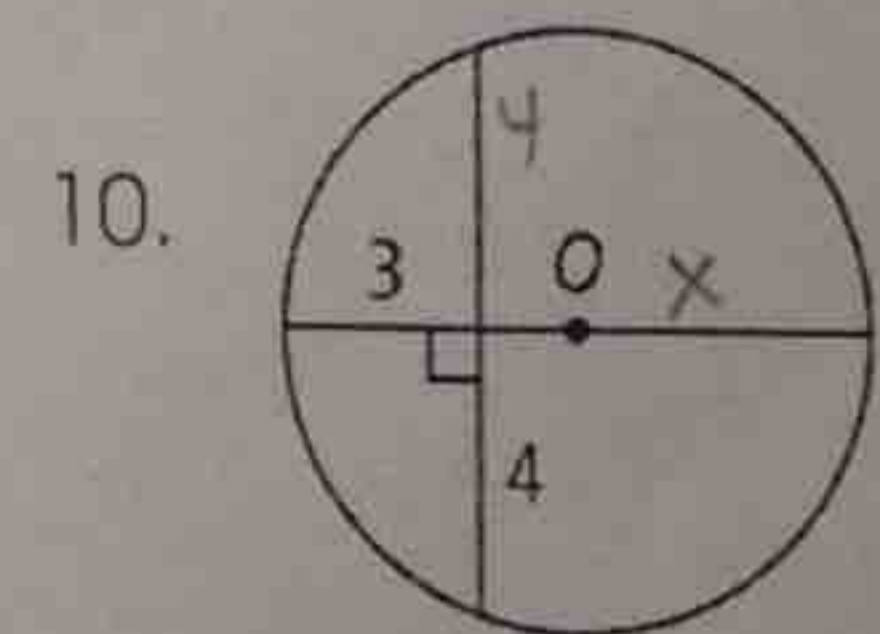
$(6)(6) = 8y$

$36 = 8y$

$y = 4.5$

$D = 12.5$

9.

12   O

24   x

$12(x + 12) = 24^2$

$12x + 144 = 576$

$12x = 432$

$x = 36$

10.
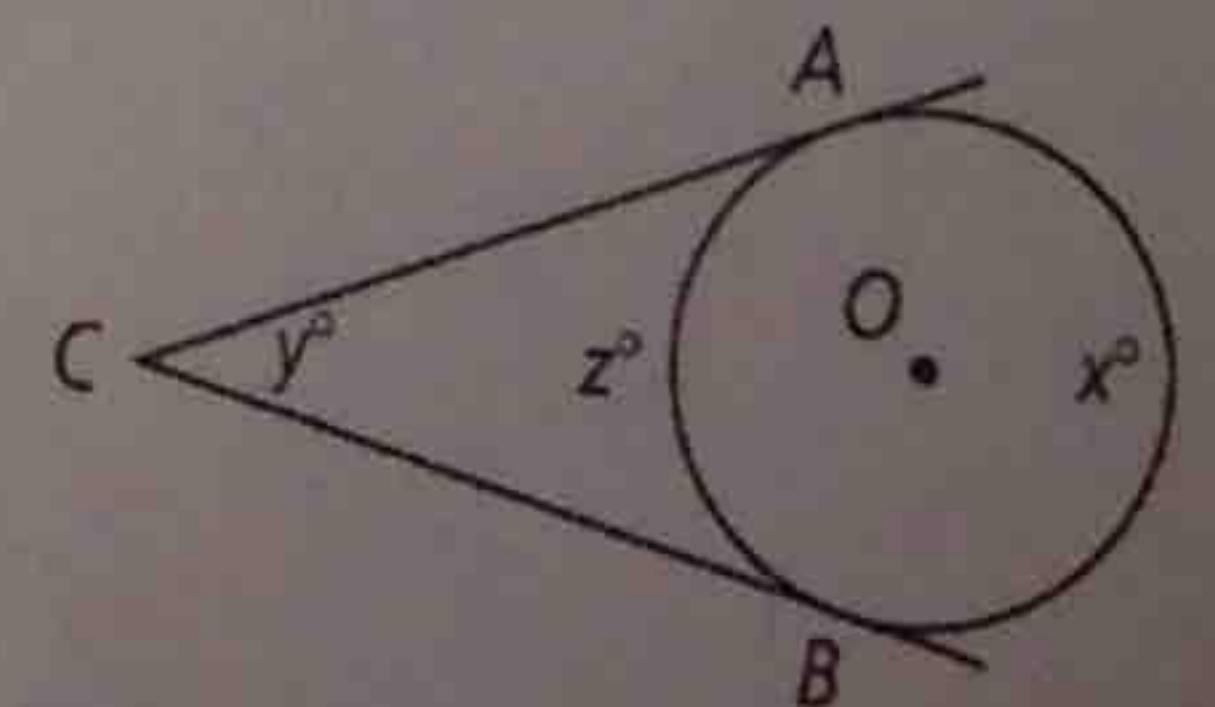
4

3   O   x

4

$(4)(4) = 3x$

$16 = 3x$

$x = 5.3$

$D = 8.3$

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

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

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

13. $m\angle C$ using x

A

C $y°$ $z°$ O $x°$

B

SKIP!