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v Geo

ANSWER KEY

AMDG

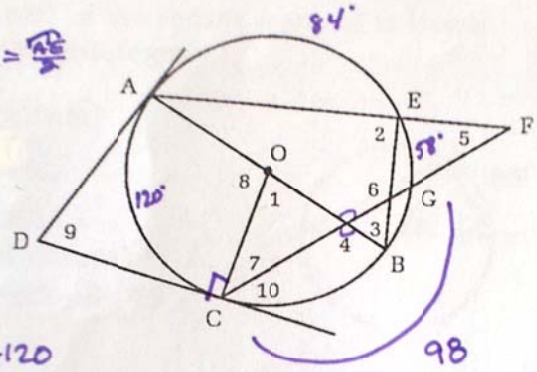
Ms. Kresov
R 2 May 201

Ch 10 Take Home Portion of the Test

Each problem is worth 1 points, totaling 38 points. This part of the test is worth 40 points. Points earned will be reduced 10% every day it is late, regardless of reason. If you are sick, scan and email it

In problems 1–10, find the measure of each angle. Refer to the diagram and the information given.

Given: ⊙O
$\overline{AB}$ is a diameter,
$\overline{DA}$ and $\overline{DC}$ are tangents.
$\overset{\frown}{AC} = 120°$, $\overset{\frown}{AE} = 84°$, $\overset{\frown}{EG} = 58°$



1	∠1 SUPP ∠8	1 60°
2	∠2	2 90°
3	∠3 = 84/2 = AE/2	3 42°
4	∠4	4 101°
5	∠5 = 58/2	5 31°
6	∠6	6 121°
7	∠7	7 41°
8	∠8	8 120°
9	∠9 = 180−120	9 60°
10	∠10 = 98/2 = 49	10 49

Part II (10 points)

In problems 11–20, decide whether each statement is True (T) or False (F).

11 Two concentric circles have exactly 1 common tangent. 11 F

12 If a quadrilateral is inscribed in a circle, its opposite angles are supp. 12 T

13 π is defined to be the ratio of the diameter of a ⊙ to its circumference. 13 F

πd C/d = π IF THESE WERE SWITCHED, IT WOULD BE TRUE.

14 Parallelogram ABCD is inscribed in a ⊙. Then m∠A must be 90. 14 T

15 If an inscribed angle and a central angle intercept the same arc, they are ≅. 15 F

16 The sides of an equilateral triangle inscribed in a circle are closer to the center of the circle than the sides of a square inscribed in the circle. 16 T

17 A line can intercept a circle either 0 times, 1 time, or 2 times. No other possibilities exist. 17 T

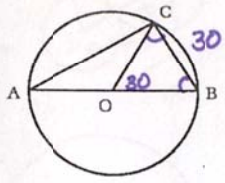
18 If a chord of a circle is twice as long as a radius of that circle, the chord is a diameter. 18 T

19 If two circles have 4 common tangents, then the two circles intersect. 19 F

20 If a tangent segment and a secant segment are drawn to a circle from the same point, the external part of the secant segment is longer than the tangent segment. 20 F

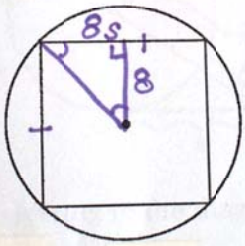
Part III (24 points)

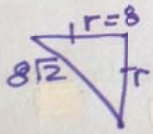
21 ⊙O
$\angle OCB = 75°$
Find the measure of $\angle A$.
$\angle COB = 180 - 2(75)$



21 15

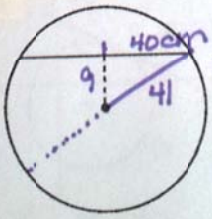
22 A square with an area of 256 is inscribed in a circle.
Find the radius of the circle.
$S^2 = 256$
$S = 16$





22 8√2

23 Find, to the nearest cm, the circumference of a circle in which an 80-cm chord is 9 cm from the center.



23 82π or 258cm

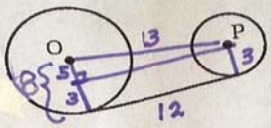
bis
∴ 40cm

$r = 41\text{cm}, d = 82\text{cm}$

$d\pi = C = 82\pi \approx$

$257.6 \approx 258\text{cm}$

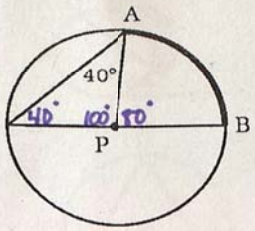
24 ⊙O with radius 8
⊙P with radius 3
The length of the common external tangent seg. is 12.
Find the distance between the two circles.



24 13

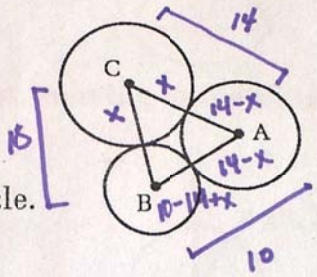
25 If a point is chosen at random on ⊙P, what is the probability that it is on arc AB?

80/360



25 2/9

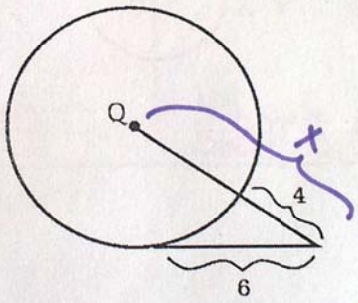
26 AC = 14 ⊙A: r = 3
AB = 10 ⊙B: r = 7
CB = 18 ⊙C: r = 11
Find the length of the radius of the largest circle.



26 11

18 = x + 10 − 14 + x
18 = 2x − 4
22 = 2x
11 = x

27 Find the length of the radius of ⊙Q.

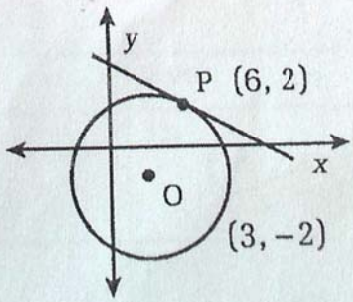


27 5

$6^2 = 4x$
$9 = x$
$r = 9 - 4 = 5$

Solve problems 28 and 29 by referring to the diagram.

28 Find the length of the radius of ⊙O.

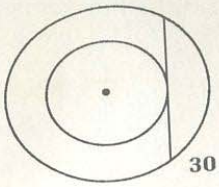


28 5

29 Find the slope of the tangent to ⊙O at P.

29 −3/4

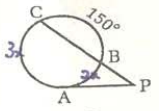
30 Given: Two concentric circles with radii of lengths 16 and 20.
Find the length of a chord of the larger circle that is tangent to the smaller circle.



30 24

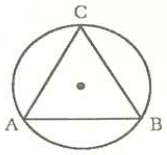
$5x+150=360$
$5x = 210$
$x = 42$

31 The ratio of the lengths of $\overset{\frown}{AC}$ to $\overset{\frown}{AB}$ is 3:2.
Find the measure of $\angle P$.



31 21

32 Chords $\overline{AB}$, $\overline{BC}$, and $\overline{CA}$ are equidistant from the center of the circle.
Find the measure of $\overset{\frown}{AB}$.

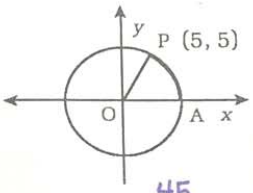


32 120

Solve problems 33 and 34 by referring to the diagram.

33 Find the length of the radius of ⊙O.

34 Find the length of $\overset{\frown}{PA}$, correct to the nearest tenth.



33 $5\sqrt{2}$

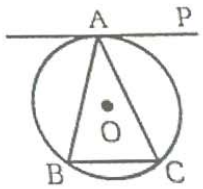
5.6 5.55

34 _____

$1.767\pi 5$

$\frac{45}{360}\pi d = \frac{1}{8}\pi\, 10\sqrt{2} = \frac{5}{4}\sqrt{2}\cdot\pi$

Complete the proof.



Given: $\triangle ABC$ *is isos. with* $\overline{AB} \cong \overline{AC}$.
$\overline{PA}$ *tan to* ⊙O
Prove: $\overleftrightarrow{PA} \parallel \overleftrightarrow{BC}$

$\triangle ABC$ *is isos. with* $\overline{AB} \cong \overline{AC}$.	Given
$\angle B \cong \angle C$	35. ☆ ⇒ △
$\angle B \cong \angle PAC$	36. inscrib Ls make same arc ⇒ ≅ Ls
$\angle C \cong \angle PAC$	37. Trans
$\overleftrightarrow{PA} \parallel \overleftrightarrow{BC}$	38. Alt int Ls ≅ ⇒ ∥

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F 3 May 2013

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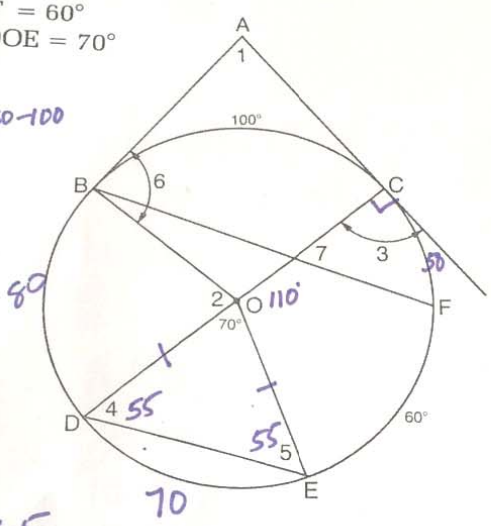
Geo

Ch 10 In Class Portion of the Test

In problems 1–7, refer to the diagram and the information given.

Given: ⊙O
$\overline{AB}$ and $\overline{AC}$ are tangent segments.
$\overline{DC}$ is a diameter.
$\overset{\frown}{BC} = 100°$
$\overset{\frown}{EF} = 60°$
$\angle DOE = 70°$



1 Find m∠1. 180−100

2 Find m∠2.

3 Find m∠3. tan→rt∠

4 Find m∠4.

5 Find m∠5.

6 Find m∠6. tan→rt∠

7 Find m∠7.

$\frac{80+50}{2} = \frac{130}{2} = 65$

1 80° 9. 120

2 80° 10. 6

3 90° 11. 13

4 55° 12. 5

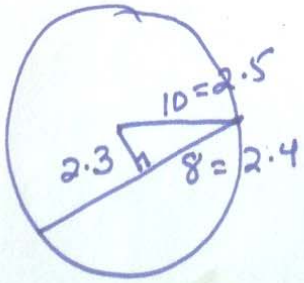
5 55° 13. 10π

6 90 14. 6π

7 65 15 9

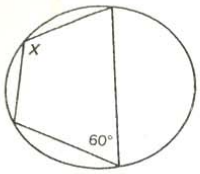
8 How far from the center of a circle is a chord that is 16 units long if a radius of the circle is 10 units long?

8 6 units



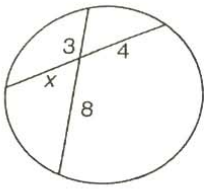
In problems 9–12, find the unknown values.

9



9 120

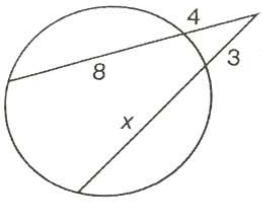
10



$4x = 3 \cdot 8$
$x = 3 \cdot 2$

10 6

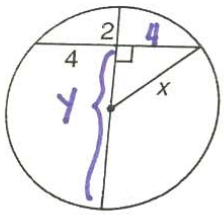
11



$4(12) = 3(x+3)$
$4(4) = x+3$
$16-3 = 13 = x$

11 13

12



$4 \cdot 4 = 2(y)$
$8 = y$
$10 = d$
$5 = r$

12 5

13 If the diameter of a circle is 10, find its circumference.

13 10π

14 If the radius of a circle is 3, find its circumference.

14 6π

15 If the circumference of a circle is 18π, find its radius.

$d = 18$
$r = 9$

15 9