*Vocab or problems you don't have to worry about*

Assignment E

Section 1: Please fill in the blank with the appropriate word. (1 point each). (It may be helpful to draw a diagram for each).

1. A(n) __Radius__ is a segment that connects the center of a circle to a point on the circle.

2. The measure of an intercepted arc is equal to the measure of its __Central__ angle.

3. A diameter is a special kind of __chord__ that passes through the center of a circle.

4. A(n) __Secant__ is a line that contains a chord and extends beyond a circle.

* 5. A(n) __Sphere__ is the set of all points in a plane a given distance from a point.

6. The measure of an inscribed angle is equal to ~~measure~~ __half__ the measure of its intercepted arc.

7. A radius and a tangent that meet at a point of tangency are __perpendicular__.

* 8. Congruent chords are _____ from the center of a circle.

9. An angle inscribed in a semicircle is a(n) __right__ angle.

* 10. If a diameter and a chord are perpendicular, then the diameter __bisects__ the chord and its intercepted arc.
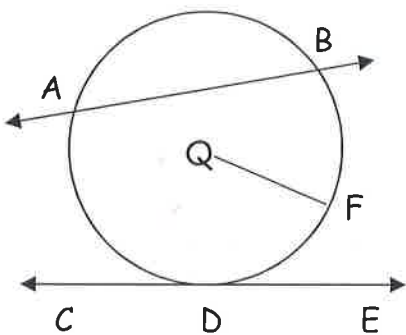
Q is the center of the circle. D is a point of tangency.

Section 3: Find all indicated angle and arc measurements about circle Q. LJ is a diameter.

16. m∠JQM = __82°__   17. mKL = __107°__

18. mJM = __82°__   19. mKML = __253°__

20. m∠JQL = __180°__   21. mJLM = __278°__

22. mJML = __180°__   23. m∠KQM = __155°__

mKJ = 73

m∠LQM = 98

24
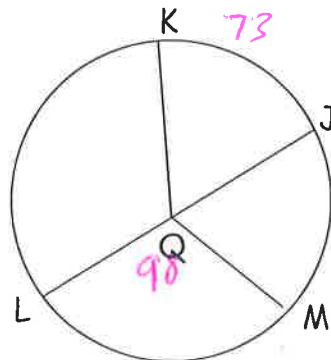
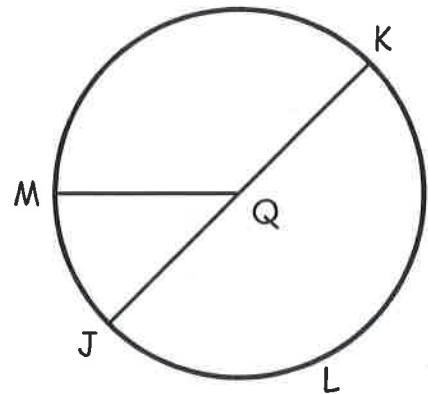# Page 1 – Central Angles & Arc Measures

Example 1: JK is a diameter of Circle Q.

Name two examples for each:

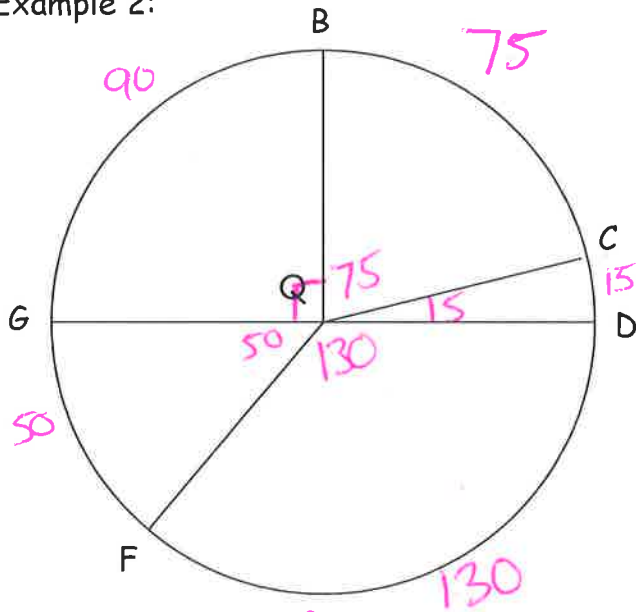Minor Arc: __$\overset{\frown}{MJ}$__ , __$\overset{\frown}{MK}$__

Major Arc: __$\overset{\frown}{MLK}$__ , __$\overset{\frown}{JKM}$__

Semicircle: __$\overset{\frown}{JMK}$__ , __$\overset{\frown}{JLK}$__

Name A Pair of Adjacent Arcs: __$\overset{\frown}{MJ}$__ , __$\overline{MK}$__

Example 2:

Q is the center of the circle.

GD ⊥ BQ

mBC = 75

m∠FQD = 130

1. m∠CQD = __15°__

2. m∠CQB = __75°__

3. m∠BQG = __90°__

4. m∠GQF = __50°__

5. m∠FQD = __130°__

6. m∠GQD = __180°__

7. m∠GQC = __165°__

8. m∠BQD = __90°__

9. m∠FQB = __140°__

10. m∠FQC = __145°__

11. mBC = __75°__

12. mCD = __15°__

13. mBF = __140°__

14. mDF = __130°__

15. mGBD = __180°__

16. mFBD = __230°__

17. mGBF = __270°__

18. mCBF = __215°__

19. mGC = __165°__

20. mBG = __90°__

Page 2 – Problem Set 1

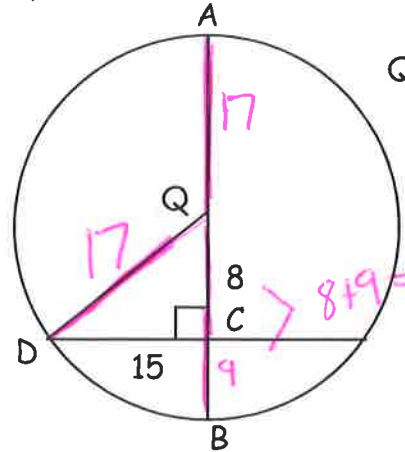Directions: Solve for each indicated variable or segment. Q is the center of each circle.
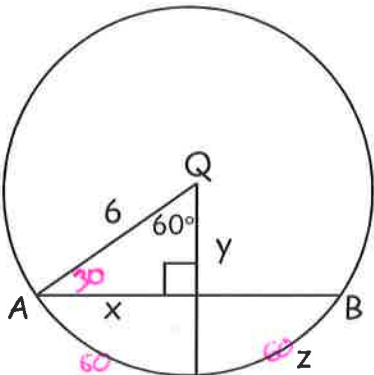
1.

z refers to an arc measure.

5
y
Q
x
5
z

$x =$ __5√2__ $y =$ __5__ $z =$ __90°__

2.

A
17
Q
17
8
C
D   15   9
B

QC = 8

8+9=17

$QD =$ __17__ $CB =$ __9__ $AQ =$ __17__

3.

Q
6   60°
y
30
A   x   B
60   60
120
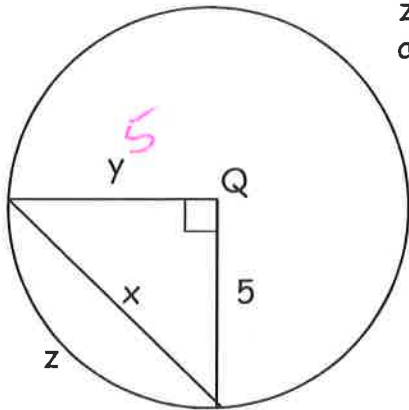
mAB = 120°

z refers to an arc measure.

$x =$ __3√3__ $y =$ __3__ $z =$ __60°__

4.

Q
x   130°
z
y
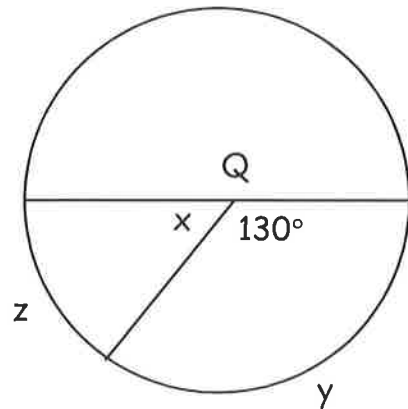
y and z refers to arc measures.

$x =$ __50__ $y =$ __130__ $z =$ __50__

5.

C
80
A   240   180   B
Q

mBC = 80

$m\angle 1 =$ __80__

$m\angle 2 =$ __40__

Textbook Practice: p. 341 CE #1-13; p. 341-342 WE #1-6, 10, 11
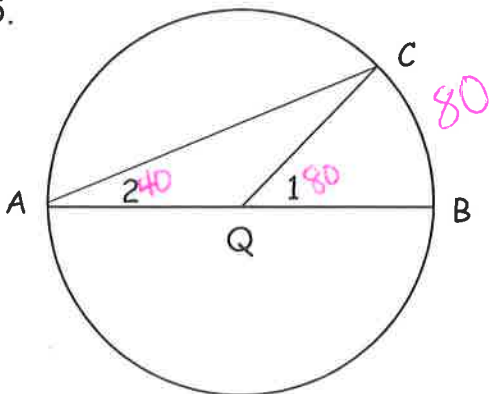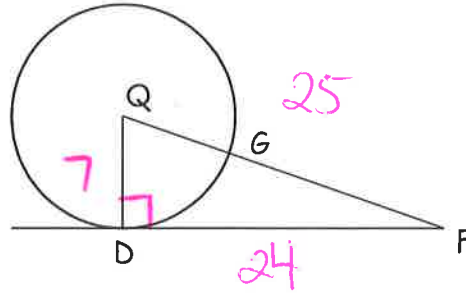
Example 1: Given Circle Q with a radius length of 5. A is a point of tangency. $AB = 5\sqrt{3}$.
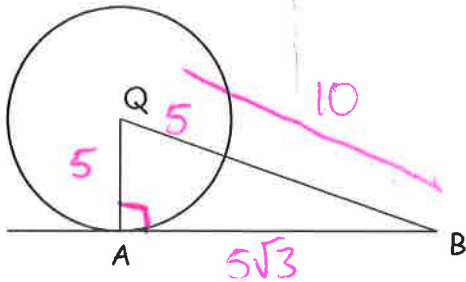
Find: QB = **10**

m∠AQB = **60°**   m∠QBA = ~~180°~~ **30°**

Example 2: Given Circle Q with a radius length of 7. D is a point of tangency. DF = 24.

Find:
QF = **25**   QG = **7**   GF = **18**

m∠DQF = **73.74°**   mDG = **73.74°**

Is G the midpoint of QF? **NO**

Example 3: Given JK is a diameter and KL is a tangent. The radius of the circle is 8.
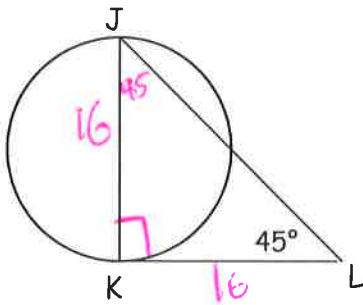
Find: JK = **16**   KL = **16**

JL = **16√2**
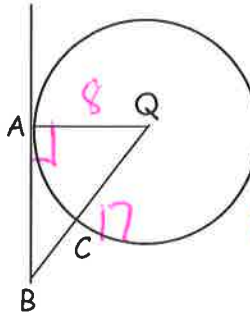
Given Circle Q and A is a point of tangency.

QA = 8
QB = 17
Find AB = **15**

Example 1: B and C are points of tangency.

Classify △ABC by sides:

_____

m∠BAC = 32

m∠ABC = _____   m∠BCA = _____
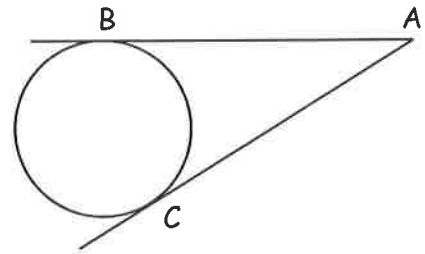
Example 2: B and C are points of tangency.

x = ___2___

$\frac{1}{2}x + 9 = 4x + 2$

$7 = \frac{7}{2}x$
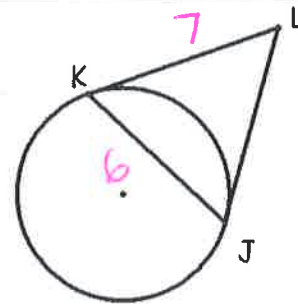
$X = 2$

BA = ___10___   CA = ___10___

½x + 9

4x + 2
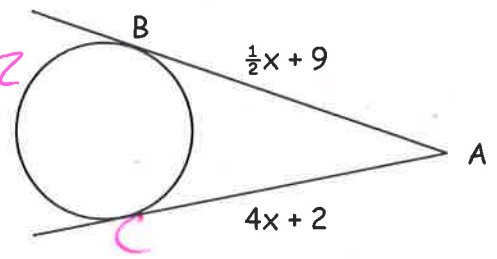
Example 3: Points J, K, L, and M are points of tangency. Find the perimeter of quadrilateral ABCD.

AJ = 4, KB = 7, CL = 3, DM = 5

4   4

5

5

3   3

7

7
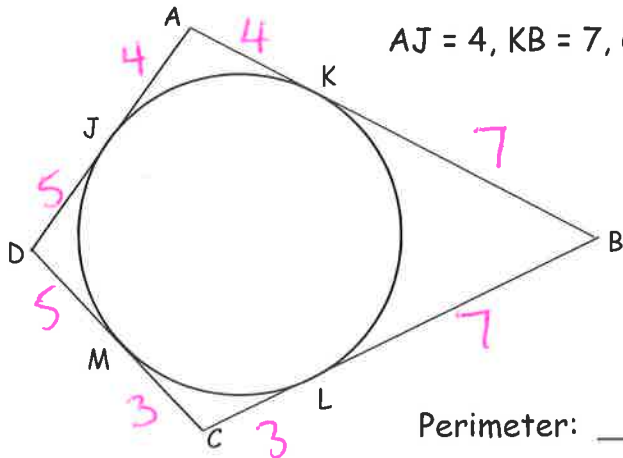
Perimeter: ___38___

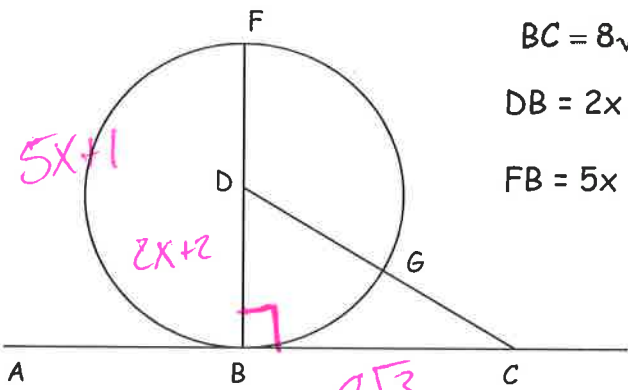Points K and J are points of Tangency.

KL = 7; KJ = 6;

m∠LKJ = 70

7

6

Quia Quiz 1: _____ / 4

Page 5 – Problem Set 2

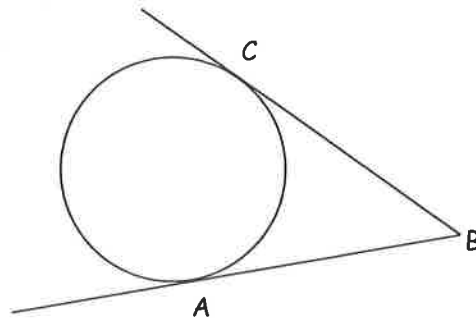**Directions:** Find the value of each indicated variable and measure.

1.

AC is a tangent of Circle D.

$BC = 8\sqrt{3}$

$DB = 2x + 2$

$FB = 5x + 1$

(handwritten) 5X+1 , 2X+2 , 8√3

$2(2x+2) = 5x+1$

$4x+4 = 5x+1$ (x=3)

x = __3__   DB = __8__

FB = __16__   m∠DBC = __90__

m∠DCB = __30__   DC = __16__

GC = __8__

2.

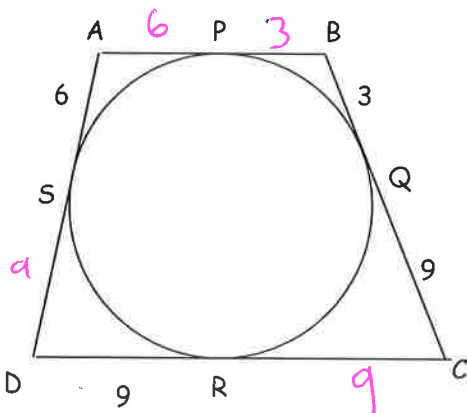BC and AB are tangents to the circle.

$AB = 4x + 8$

$CB = 7x + 2$

$4x+8 = 7x+2$

$6 = 3x$

$x = 2$

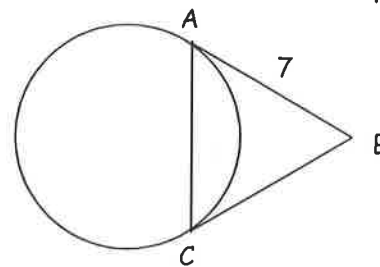x = __2__

AB = __16__

BC = __16__

3.

P, Q, R, and S are points of tangency.

(handwritten labels) A 6 P 3 B, 6, 3, S, Q, 9, 9, D 9 R 9 C

Find the perimeter of Quadrilateral ABCD.

__54__

4.

AB and BC are tangent segments.

m∠BAC = 71

(handwritten labels) A, 7, B, C

BC = __7__

m∠ABC = _____

Textbook Practice: p. 335 WE #1-5