Geometry: A Complete Course

(with Trigonometry)

Module E – Progress Tests

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ERRATA
3/2015

VideoText *Interactive*

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Module E - Progress Tests

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combined

Quiz A 103

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combined

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combined

Quiz A 115

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Unit VI Test - Form A 119

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Unit I-VI Cumulative Review - Form A 131

Unit I-VI Cumulative Review - Form B 137

Name _____

2. Match each statement in column I with a phrase in column II.

Column I		Column II
Rectangle	_____	a) An equilateral parallelogram
Diagonal of a polygon	_____	b) A parallelogram that has one right angle
Polygon	_____	c) A closed "path" of four segments that does not cross itself
Convex Polygon	_____	d) A quadrilateral that has exactly one pair of parallel sides
Square	_____	e) An end point of a side of a polygon
Parallelogram	_____	f) A polygon in which any diagonal lies inside the polygon
Trapezoid	_____	g) A quadrilateral with opposite sides parallel
Vertex of a polygon	_____	h) A simple closed curve made up entirely of line segments
Quadrilateral	_____	i) A segment whose endpoints are two non-consecutive vertices of a polygon
Rhombus	_____	j) An equilangular equilateral quadrilateral

3. A list of properties found in the group of seven special quadrilaterals is given below. Write the name of the special quadrilateral(s) beside the given property for which that property is always present.

a. Both pairs of opposite sides are parallel. _____

b. Exactly one pair of opposite sides are parallel. _____

c. Both pairs of opposite sides are congruent. _____

d. Exactly one pair of oppsite sides are congruent. _____

e. All sides are congruent. _____

f. All angles are congruent. _____

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Name _____

4. Indicate whether each of the following is true or false.

a) Every square is a rhombus. _____

b) Every rhombus is a square. _____

c) Every square is a kite. _____

d) Every rhombus is a kite. _____

e) If a quadrilateral has three sides of equal length, then it is a kite. _____

f) Every property of every square is a property of every rectangle. _____

g) Every property of every trapezoid is a property of every parallelogram. _____

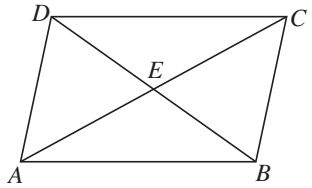
h) Every property of a parallelogram is a property of every rhombus. _____

Quiz Form A

Name _____

Class _____ Date _____ Score _____

Unit V - Other Polygons
Part A - Properties of Polygons
Lesson 2 - Parallelograms



Use parallelogram ABCD to the right for problems 1 – 6.

1. Name two pairs of congruent sides. _____

2. Name two pairs of congruent angles. _____

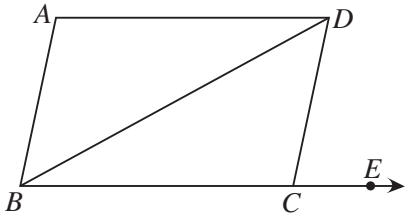
3. Name pairs of congruent segments that are not sides of the parallelogram. _____

4. Name two pairs of supplementary angles. _____

5. If m∠CDB = 40, find m∠ABD. _____

6. If m∠ADC = 95, find m∠ABC and m∠BAD. _____

Use parallelogram ABCD shown to the right to complete each statement in problems 7 – 11.



7. If AB = $3x$ and CD = $x + 10$, then AB = _____

8. If AD = $3x + 15$ and BC = 21, then AD = _____

9. If AD = $\frac{x}{2}$ and BC = $2x - 12$, then BC = _____

10. If m∠BAD = 100°, then m∠DCE = _____

11. If m∠ADC = 85° and m∠ABD = 40° then m∠DBC = _____

Quiz Form A

Name _____

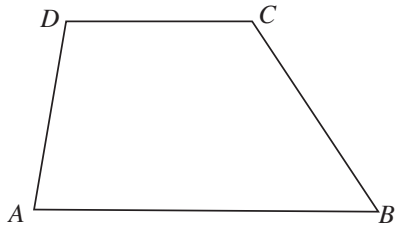
Class _____ Date _____ Score _____

Unit V - Other Polygons
Part A - Properties of Polygons
Lesson 4 - Trapezoids
Lesson 5 - Kites

---

1. In trapezoid ABCD, $\overline{AB} \parallel \overline{DC}$, $m\angle B = 8x - 15$ and $m\angle C = 15x - 12$. Find $m\angle B$.

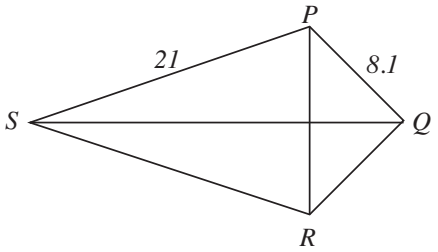
$m\angle B$ = _____



2. PQRS is a kite. Find SR and QR

SR = _____

QR = _____



Quiz Form A

Name _____

Class _____ Date _____ Score _____

Unit V - Other Polygons
Part A - Properties of Polygons
Lesson 6 - Midsegments

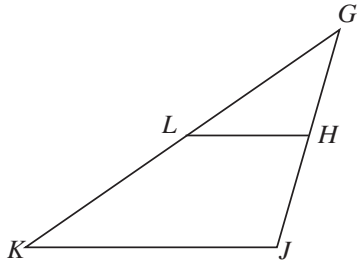
Use the figure to the right for problems 1 and 2.

1. Point H is the midpoint of $\overline{GJ}$.
Point L is the midpoint of $\overline{GK}$.
If GJ = 12, and HL = 9, Find GH, HJ, and KJ.

GH = _____

HJ = _____

KJ = _____



Problems 1 and 2

2. Point H is the midpoint of $\overline{GJ}$.
Point L is the midpoint of $\overline{GK}$.
If m∠GLH is 21 degrees and KJ = 14½ ,
find m∠K and HL.

m∠K = _____

HL = _____

3. Using the figure to the right, find DE, BC, m∠A, m∠B, and m∠C.

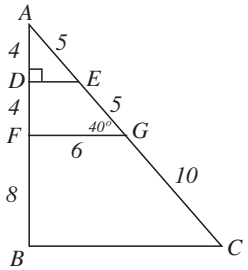
DE = _____

BC = _____

m∠A = _____

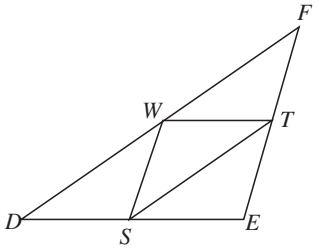
m∠B = _____

m∠C = _____



Name _____

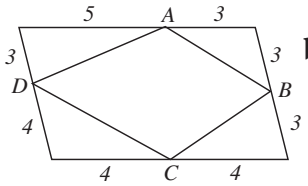
4. In the figure to the right, W, T, and S are midpoints of the sides of triangle DEF. If WT = 5, ST = 8, and SW = 7, What is the perimeter of △DEF?



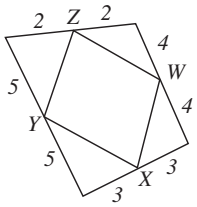
Permimeter of △DEF = _____

5. Which of the following named quadrilaterals are parallelograms?

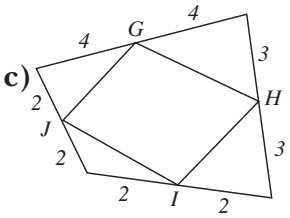
a)



b)

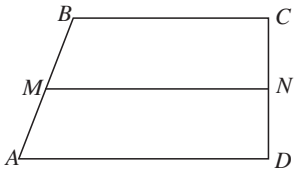


c)



_____ _____ _____
_____ _____ _____
_____ _____ _____

6. In the figure to the right, ABCD is a trapezoid with median $\overline{MN}$ as shown.



a) If BC = $10t$ and MN = $15t$, find AD. AD = _____

b) If AD = $35x$ and MN = $28x$, find BC. BC = _____

c) If AD = $9\sqrt{3}$ and BC = $5\sqrt{6}$, find MN. MN = _____

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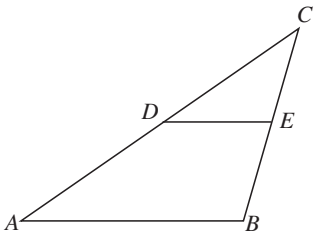
Name _____

4. In the figure to the right, point D is the midpoint of $\overline{AC}$, and point E is the midpoint of $\overline{BC}$. AD = x + 5, DC = 2y + 6, DE = 2x – 5, and AB = y + 8. Find DE and AB.

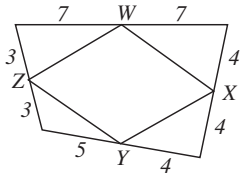


AB = _____

DE = _____

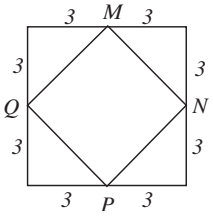
5. Which of the following named quadrilaterals are parallelograms?

a)



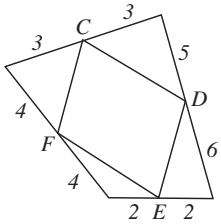
_____

b)



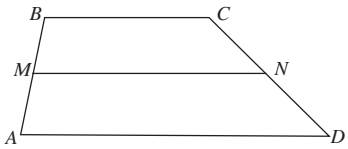
_____

c)



_____

6. In the figure to the right, ABCD is a trapezoid with median $\overline{MN}$ as shown.



a) If BC = $2x + 5$ and MN = $10x - 1.2$, find AD.

AD = _____

b) If BC = $3\sqrt{2}$ and AD = $7\sqrt{2}$, find MN.

MN = _____

c) If BC = 6.7 and AD = 14.4, find MN.

MN = _____

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Quiz Form A

Name _____

Class _____ Date _____ Score _____

Unit V - Other Polygons
Part A - Properties of Polygons
Lesson 7 - General Polygons

In Problems 1 - 3, find the number of sides of a polygon if the sum of the measure of its angles is:

1. 8640° sides = _____ **2.** 1440° sides = _____ **3.** 1800° sides = _____

In Problems 4 - 6, if the measure of each interior angle of a regular polygon is the given measure, how many sides does the polygon have?

4. 162° sides = _____ **5.** 150° sides = _____ **6.** 108° sides = _____

In Problems 7 - 9, find the sum of the measures of the interior angles of a polygon with the given number of sides.

7. 11 sides sum = _____ **8.** 9 sides sum = _____ **9.** 102 sides sum = _____

In Problems 10 - 12, find the measure of each exterior angle of a regular polygon with the given number of sides.

10. 3 angle = _____ **11.** 5 angle = _____ **12.** x angle = _____

Quiz Form B

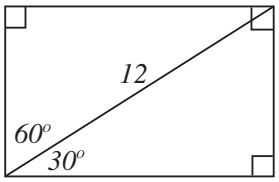
Name _____

Class _____ Date _____ Score _____

Unit V - Other Polygons
Part B - Areas of Polygons
Lesson 1 - Postulate 14 - Area
Lesson 2 - Triangles

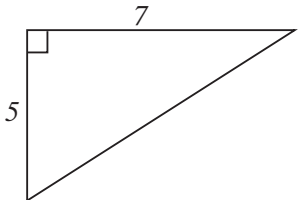
For problems 1 – 6, find the area of the given polygon using the appropriate Postulate, Theorem, or Corollary from lesson 1 and 2.

1.



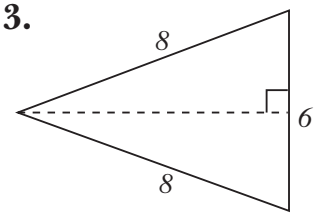
A = _____

2.



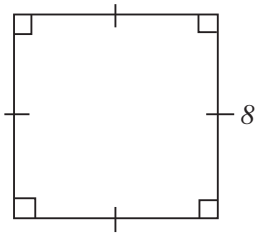
A = _____

3.



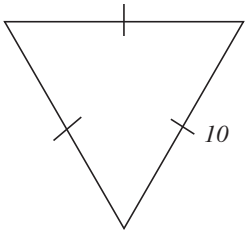
A = _____

4.



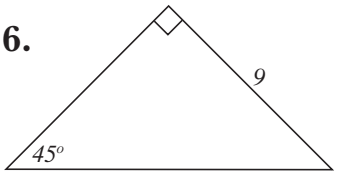
A = _____

5.



A = _____

6.



A = _____

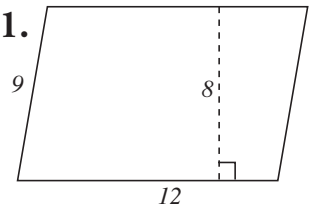
Quiz Form A

Name _____

Unit V - Other Polygons
Part B - Areas of Polygons
Lesson 3 - Parallelograms
Lesson 4 - Trapezoids

For problems 1 – 6, find the area of the given polygon using the appropriate Postulate, Theorem, or Corollary from lessons 3 and 4.

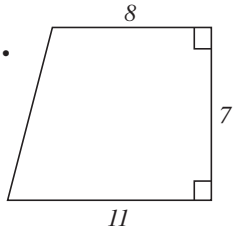
1.



(Parallelogram)

A = _____

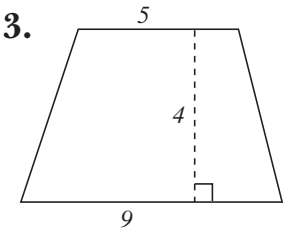
2.



(Trapezoid)

A = _____

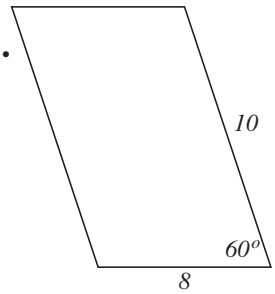
3.



(Trapezoid)

A = _____

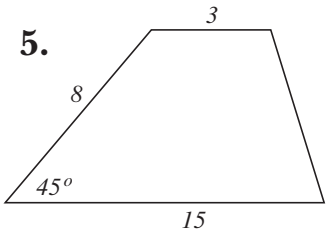
4.



(Parallelogram)

A = _____

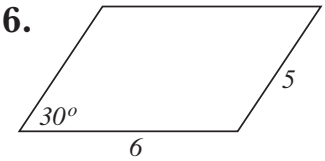
5.



(Trapezoid)

A = _____

6.



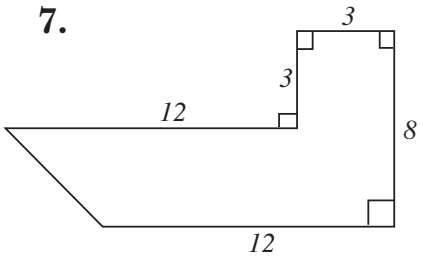
(Parallelogram)

A = _____

Name _____

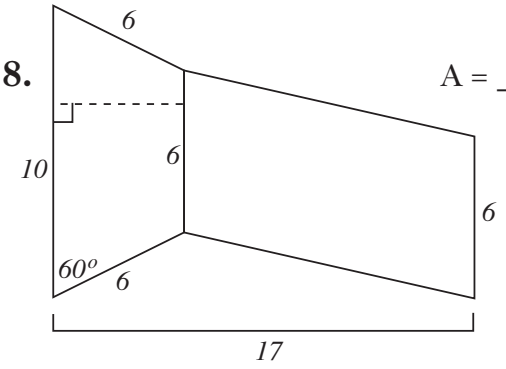
For problems 7 and 8, find the area of each polygonal region.

7.



A = _____

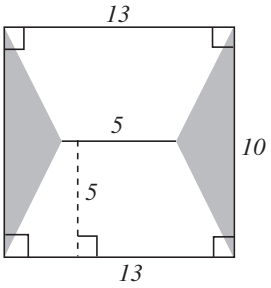
8.



A = _____

For Problems 9 and 10, find the area of the shaded region.

9.



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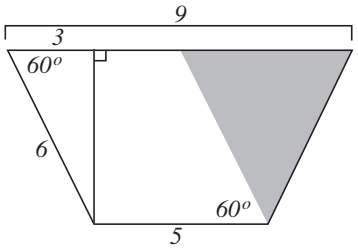
10.



A = _____

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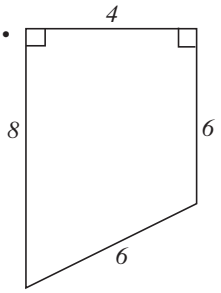
Quiz Form B Name _____

Unit V - Other Polygons
Part B - Areas of Polygons
Lesson 3 - Parallelograms
Lesson 4 - Trapezoids

For problems 1 – 6, find the area of the given polygon using the appropriate Postulate, Theorem, or Corollary from lessons 3 and 4.

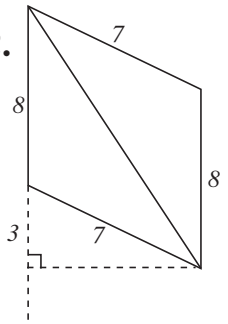
1.



(Trapezoid)

A = _____

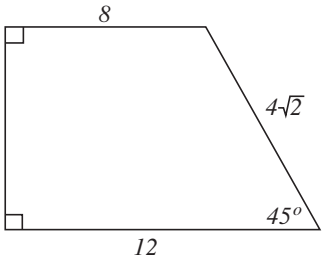
2.



(Parallelogram)

A = _____

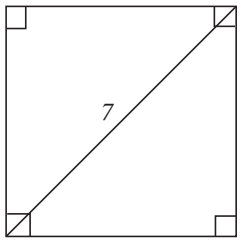
3.



(Trapezoid)

A = _____

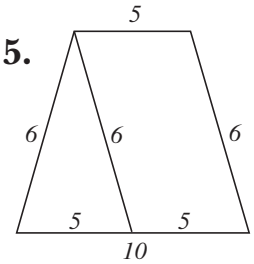
4.



(Parallelogram)

A = _____

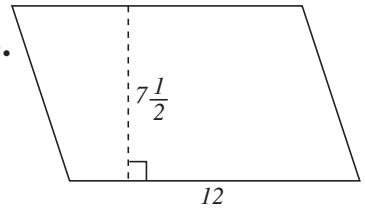
5.



(Trapezoid)

A = _____

6.



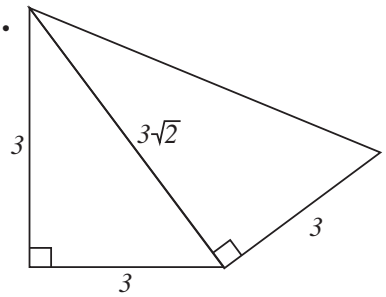
(Parallelogram)

A = _____

Name _____

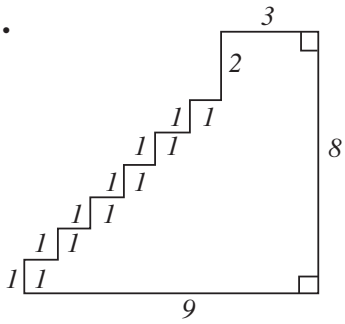
For Problems 7 and 8, find the area of each polygonal region.

7.



A = _____

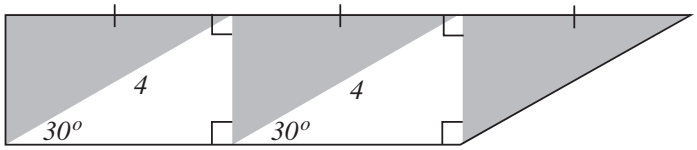
8.



A = _____

For Problems 9 and 10, find the area of the shaded region.

9.



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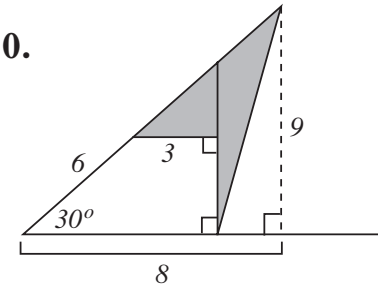
10.



A = _____

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Quiz Form A Name _____

Unit V - Other Polygons
Part B - Areas of Polygons
Lesson 5 - Regular Polygons

For problems 1-4, find the degree measure of each central angle of each regular polygon with the given number of sides.

1. 3 degree measure = _____

2. 8 degree measure = _____

3. 12 degree measure = _____

4. 10 degree measure = _____

For problems 5-7, complete the chart for each regular polygon described.

	n	s	P	a	A
5.	3	4	_____	_____	_____
6.	6	_____	_____	$\sqrt{3}$	$6\sqrt{3}$ units^2
7.	6	_____	20.4	_____	_____

Name _____

8. Find the area of an equilateral triangle inscribed in a circle, with a radius of $4\sqrt{3}$ units.

Area = _____

9. Find the area of a square with an apothem of 8 inches and a side of length 16 inches.

Area = _____

10. Find the area of a regular hexagon with an apothem of $11\sqrt{3}$ meters and a side of length 22 meters.

Area = _____

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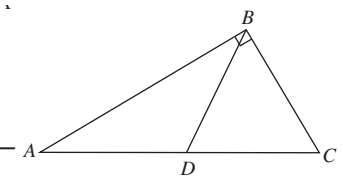
Name _____



9. △ABC is a right triangle with AB = 12 and BC = 5.
$\overline{BD}$ is a median of the triangle. What is the area of △ABD? _____

10. Two similar triangles have areas of 81 square inches and 36 square inches. Find the length of a side of the larger triangle if a corresponding side of the smaller triangle is 6.

Side = _____

11. Make a complete schedule for a tournament with 6 teams.

Week 1 _____

Week 2 _____

Week 3 _____

Week 4 _____

Week 5 _____

Name _____

Class _____ Date _____ Score _____

Unit V - Other Polygons

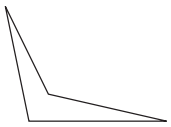
1. Name the seven special quadrilaterals and sketch the network illustrating the hierarchy.

1 _____
2 _____
3 _____
4 _____
5 _____
6 _____
7 _____

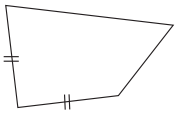
2. Tell whether each of the following statements is true or false.

a) A property of every rhombus is a property of every parallelogram. _____

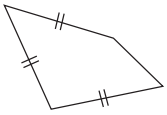
b) A trapezoid can have three congruent sides. _____



c) Every quadrilateral is a convex polygon. _____



d) If a quadrilateral has two consecutive sides of equal length, then it must be a kite. _____



e) If a quadrilateral has three sides of equal length, then it must be a trapezoid. _____

f) There exists a figure which is a rectangle and a parallelogram, but is not a square. _____

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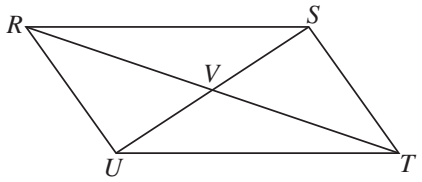
Name _____

3. Find the length of the sides of parallelogram ABCD if the perimeter of the parallelogram is 110cm. and the measure of two consecutive sides is $3x - 2$ and $2x + 12$ respectively.

AB = _____
BC = _____
CD = _____
DA = _____

4. RSTU is a parallelogram. RV = 8, and UV = 5. Find RT and US. Give a reason to justify your answers.



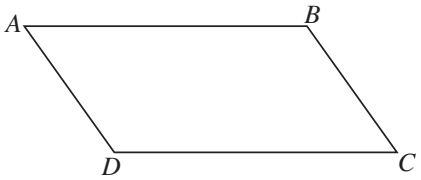
RT = _____ US = _____

_____

_____

_____

5. ABCD is a parallelogram. m∠A = 37, find m∠B, m∠C, and m∠D. Give a reason to justify your answers.



m∠B = _____ m∠C = _____
m∠D = _____

_____

_____

_____

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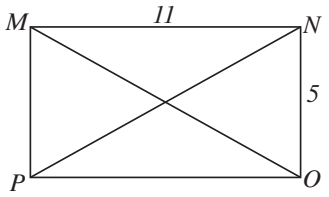
Name _____

6. MNOP is a rectangle as shown. Find MO and NP. Give a reason to justify your answers.



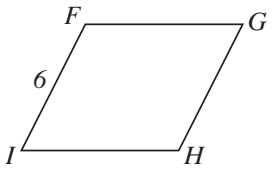
MO = _____ NP = _____

_____

_____

_____

7. Quadrilateral FGHI is a rhombus as shown. Find FG, GH, and HI. Give a reason to justify your answers.



FG = _____ GH = _____

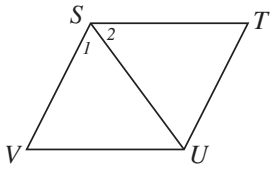
HI = _____

_____

_____

_____

8. Quadrilateral STUV is a rhombus as shown. Find m∠1, m∠2, and m∠T if m∠V = 50. Give a reason to justify your answers.



m∠1 = _____ m∠2 = _____

m∠T = _____

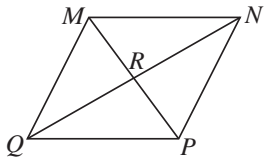
_____

_____

_____

Name _____

9. Quadrilateral MNPQ is a rhombus. Find NR if PQ = 8 and MR = 4. Give a reason(s) to justify your answers.



NR = _____

_____

_____

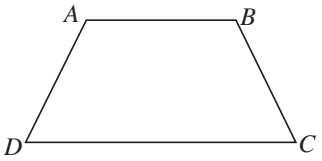
_____

_____

_____

_____

10. ABCD is an isosceles trapezoid. If m∠D = 60, find m∠A m∠B, and m∠C. Give a reason(s) to justify your answer.



m∠A = _____ m∠B =_____

m∠C = _____

_____

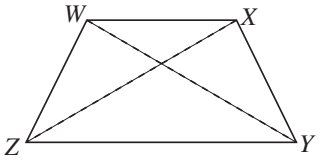
_____

_____

_____

_____

11. WXYZ is an isosceles trapezoid. If WZ = 12 and WY = 16, find XY and XZ. Give a reason(s) to justify your answer.



XY = _____ XZ = _____

_____

_____

_____

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Name _____

12. Is it possible for a trapezoid to have:

a) Two right angles? _____

b) Four congruent angles? _____

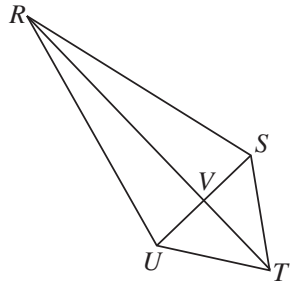
c) Three congruent sides? _____

d) Three acute angles? _____

e) Bases shorter than each leg? _____

Use the diagram to the right for problems 13 and 14.

13. Find the area of kite RSTU, with diagonals of length 13 and 6. Area = _____



For problems 13 & 14

14. Find the area of kite RSTU, if RT = 15 and VU = 3. Area = _____

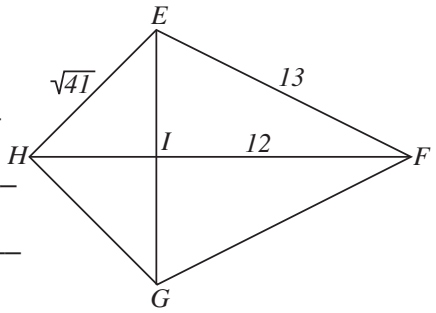
15. The area of a kite is 180 square units. The length of one diagonal is 20. How long is the other diagonal? diagonal = _____

Name _____

16. **a)** Find the area of the kite shown to the right Area = _____

b) If m∠EFG = 38°, Find m∠HFG m∠HFG = _____

c) Find m∠EIF. m∠EIF = _____



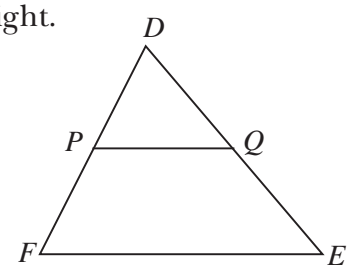
17. Points P and Q are midpoints of the sides of △DEF, shown to the right. Complete each of the following

a) FE = 18; PQ = _____

b) FE = $2x^2 - 7x + 10$; PQ = $x^2 - 9$; FE = _____; PQ = _____.

c) PQ = $x + 3$; FE = $\frac{1}{3}x + 16$; PQ = _____

d) PQ = 18; FE = _____



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Name _____

18. Find the sum of the measures of the interior angles of a 12-sided polygon. Sum = _____

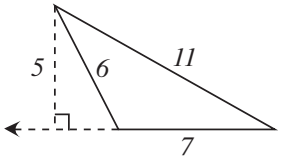
19. The sum of the measures of the interior angles of a polygon is 1980°.
How many sides does the polygon have? _____

20. Find the measure of each angle of a regular 15-gon. _____

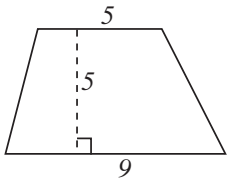
21. The measure of an exterior angle of a regular polygon is 18°.
How many sides does the polygon have? _____

Name _____

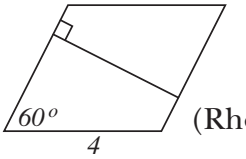
22. Find the area of each of the following labeled polygonal regions using the appropriate postulate, theorem, or corollary. (Note: figures which appear to be regular are regular)

a) 

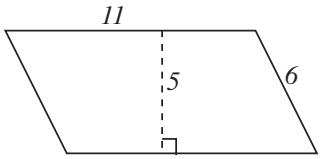
Area = _____ (Triangle)

b) 

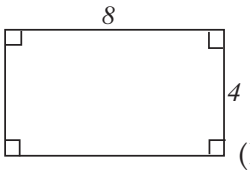
Area = _____ (Trapezoid)

c) 

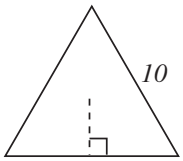
Area = _____ (Rhombus)

d) 

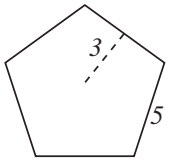
Area = _____ (Paralleloram)

e) 

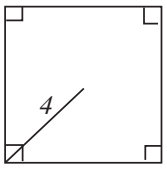
Area = _____ (Rectangle)

f) 

Area = _____ (Regular Triangle)

g) 

Area = _____ (Regular Pentagon)

h) 

Area = _____ (Square)

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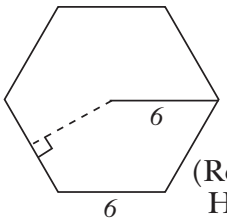
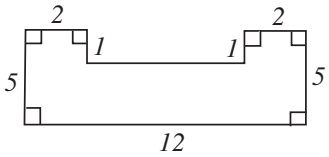
Name _____

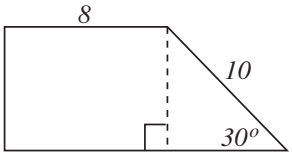
i) 

(Regular Hexagon)

Area = _____

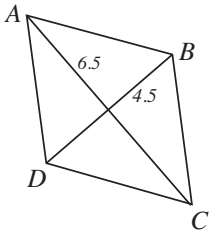
j) 

Area = _____

k) 

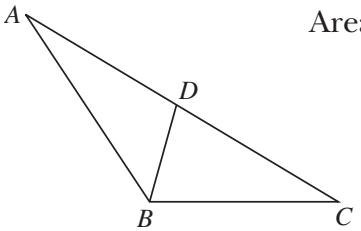
(Trapezoid)

Area = _____

l) 

(Rhombus)

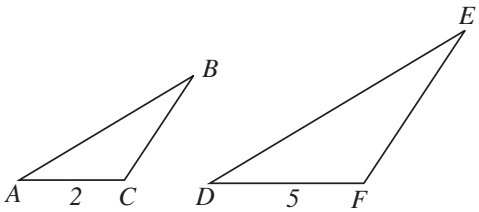
Area = _____

m) 

(Area △ABC = 42; with median $\overline{BD}$)

Area △BCD = _____

23. In the figures below, △ABC ~ △DEF; Area △ABC = 15 units. Find the area of △DFE = _____



Name _____

24. Complete a schedule for a round robin tournament with 5 teams.

Week 1 _____

Week 2 _____

Week 3 _____

Week 4 _____

Week 5 _____

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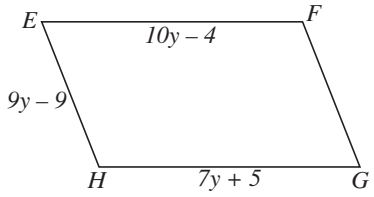
Name _____



For problems 9 and 10, refer to parallelogram EFGH shown to the right.

9. HG = _____.

a) 18 **b)** 26 **c)** 54 **d)** 3

10. FG = _____.

a) 26 **b)** 3 **c)** 54 **d)** 18

11. The area of a trapezoid with bases 20 and 40 and height 18 is _____.

a) 1080 **b)** 800 **c)** 540 **d)** 560

12. The area of a regular octagon with side 2 and apothem $1+\sqrt{2}$ is _____.

a) $64\sqrt{2}$ **b)** $2+2\sqrt{2}$ **c)** $8+8\sqrt{2}$ **d)** $16+16\sqrt{2}$

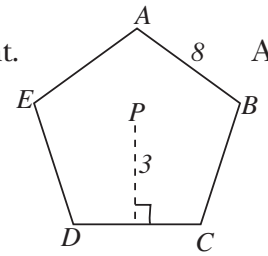
Name _____

21. If ABCD is a parallelogram named in standard notation, which of the following must always be true? _____

a) $\angle C \cong \angle D$ **b)** $\angle A \cong \angle C$ **c)** $m\angle B + m\angle D = 180$

d) $\overline{AB} \parallel \overline{BC}$ **e)** $\overline{AC} \cong \overline{BD}$ **d)** All of these

22. Find the area of the regular pentagon shown to the right. (Note: P is the center of the pentagon)

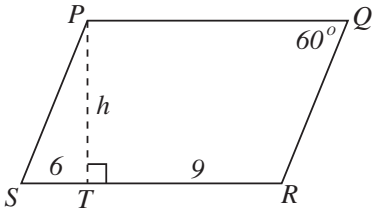


Area = _____

23. If four angles of a pentagon have measures of 105°, 75°, 145°, and 130°, then the measure of the fifth angle is? _____

a) 95° **b)** 80° **c)** 100° **d)** 85° **e)** 145°

24. The area of the parallelogram shown to the right is _____



a) $30\sqrt{3}$ **b)** $\frac{15\sqrt{3}}{2}$

c) 45 **d)** $90\sqrt{3}$

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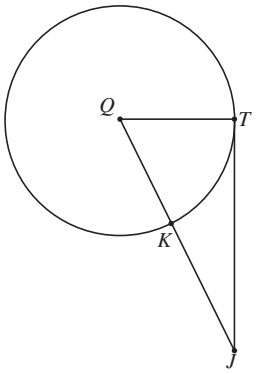
Name _____



2. Use the figure to the right to complete the following statements. In the figure, $\overline{JT}$ is tangent to ⊙Q at point T.

a) If QT = 6 and JQ = 10, then JT = _____

b) If QT = 8 and JT = 15, then JQ = _____

c) If m∠JQT = 60 and QT = 6, then JQ = _____

d) If JK = 9 and KQ = 8, then JT = _____

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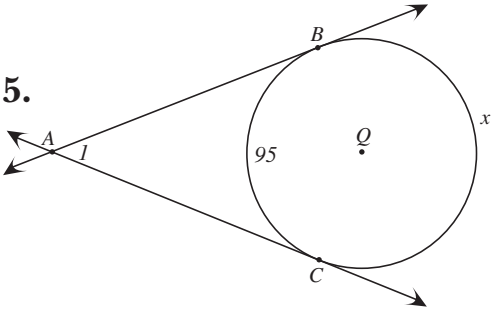
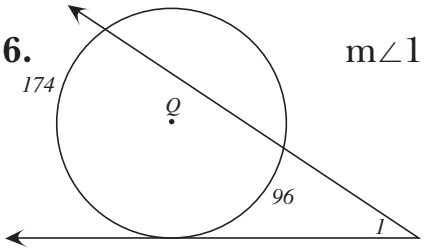
Name _____

5.



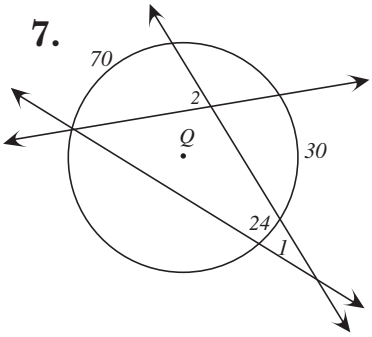
m∠1 = _____

6.



m∠1 = _____

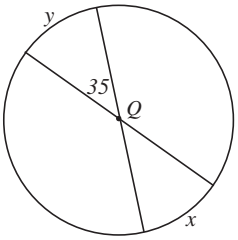
7.



m∠1 = _____

m∠2 = _____

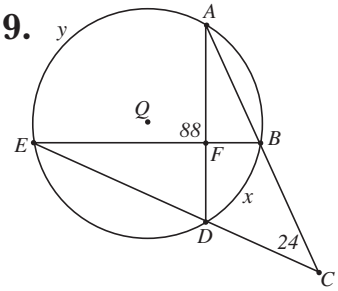
8.



y = _____

x = _____

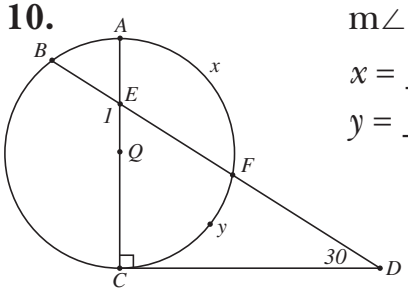
9.



x = _____

y = _____

10.



m∠1 = _____

x = _____

y = _____

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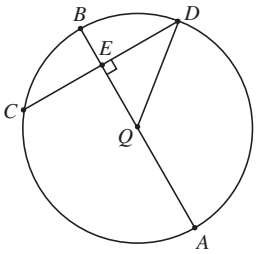
Name _____

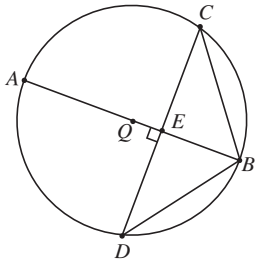
5. Find EQ in ⊙Q, if CD = 10 and DQ = 9.

EQ = _____



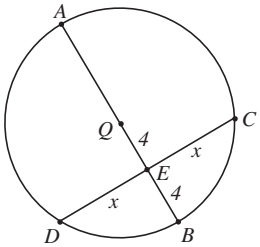
6. Find $m\widehat{CB}$ in ⊙Q, if $m\widehat{CD} = 96^{o}$

$m\widehat{CB}$ = _____



7. Find DC in ⊙Q.

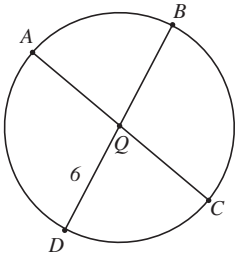
DC = _____



8. Find BD and AC in ⊙Q.

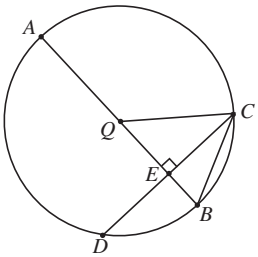
BD = _____

AC = _____



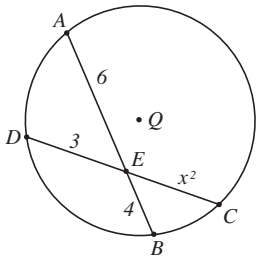
9. Find CB in ⊙Q, given that CD = 16, AQ = 9 and EQ = 5

CB = _____



10. Find CE in ⊙Q.

CE = _____



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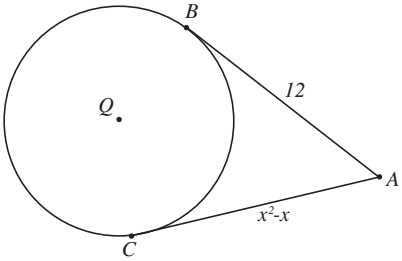
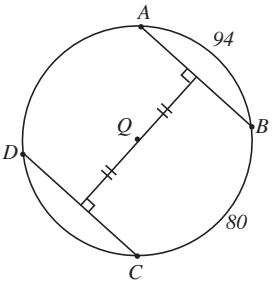
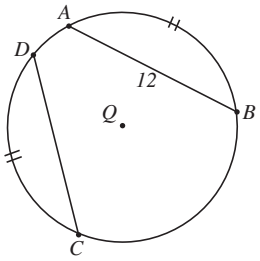
3. Find x in ⊙Q. x = _____



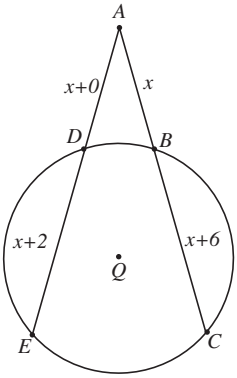
4. Find m$\widehat{AD}$ in ⊙Q. m$\widehat{AD}$ = _____



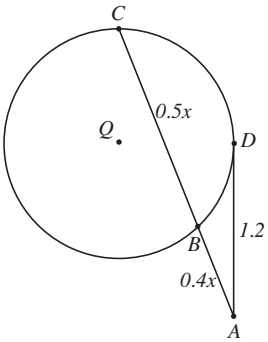
5. Find CD in ⊙Q. CD = _____



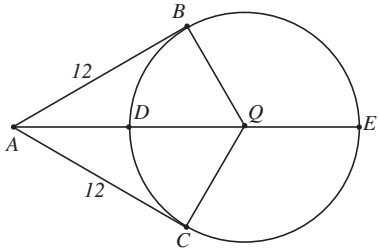
6. Find AC and AE in ⊙Q. AC = _____
AE = _____



7. Find AB and BC in ⊙Q. AB = _____
BC = _____



8. $\overline{AB}$ and $\overline{AC}$ are tangents to ⊙Q, and m∠BAC = 42°. Find m∠BAE. m∠BAE = _____



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Quiz Form A

Name _____

Unit VI - Circles
Part D - Circle Concurrency
Lesson 1 - ***Theorem 83 - "If you have a triangle, then that triangle is cyclic."***

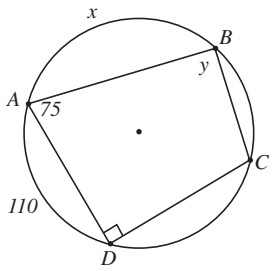
Lesson 2 - ***Theorem 84 - "If the opposite angles of a quadrilateral are supplementary, then the quadrilateral is cyclic."***

---

1. Quadrilateral ABCD is cyclic. Find x and y.

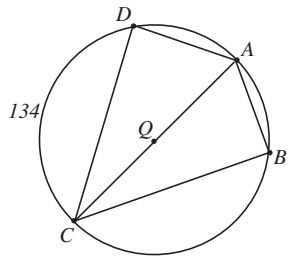
x = _____

y = _____



2. Quadrilateral (Kite) ABCD is cyclic. Find $m\widehat{AB}$.

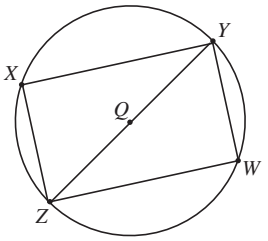
$m\widehat{AB}$ = _____



Name _____

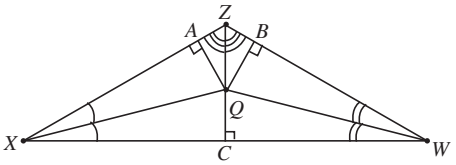
3. Given: Quadrilateral XYWZ is cyclic.
$\overline{ZY}$ is a diameter of ⊙Q.
$\overset{\frown}{XY} \cong \overset{\frown}{WZ}$

Prove: ∠XYZ ≅ ∠WZY



STATEMENT	REASON

4. The angle bisectors of the angles of △XYZ meet at point Q. QX = 75 and QC = 20. Find QB. Explain your answer.



_____

_____

_____

QB = _____

Complete the following statements by choosing "sometimes", "always", or "never".

5. Rectangles are _____ cyclic quadrilaterals.

6. Irregular quadrilaterals are _____ cyclic.

7. Regular polygons are _____ cyclic.

8. A kite is _____ a cyclic quadrilateral.

9. Opposite angles of a cyclic quadrilateral _____ add up to 180 degrees.

10. Isosceles trapezoids are _____ cyclic quadrilaterals.

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Name _____

Determine whether each of the following is always, sometimes, or never true.

_____ **13.** Congruent chords of different circles intercept congruent arcs.

_____ **14.** An angle inscribed in a semicircle is a right angle.

_____ **15.** Two circles are congruent if their radii are congruent.

_____ **16.** Two externally tangent circles have only two common tangents.

_____ **17.** A radius is a segment that joins two points on a circle.

_____ **18.** A polygon inscribed in a circle is a regular polygon.

_____ **19.** A secant is a line that lies in the plane of a circle, and contains a chord of the circle.

_____ **20.** The opposite angles of an inscribed quadrilateral are supplementary.

_____ **21.** If point X is on $\overset{\frown}{AB}$, then $m\overset{\frown}{AX} + m\overset{\frown}{XB} = m\overset{\frown}{AXB}$.

_____ **22.** The common tangent segments of two circles of unequal radii are congruent.

_____ **23.** Tangent segments from an external point to two different circles are congruent.

_____ **24.** Cyclic quadrilaterals are congruent.

_____ **25.** If two circles are internally tangent, then the circles have three common tangents.

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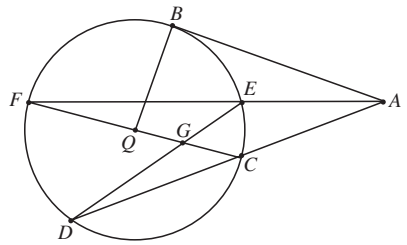
Name _____



Use the given figure to answer problems 26 to 35.
(Note: $\overline{AB}$ is tangent to Q at point B)

26. If $m\overset{\frown}{DF} = 96$, find $m\angle DEF$.

$m\angle DEF =$ _____

27. If $m\overset{\frown}{CD} = 62$ and $m\angle EGF = 110$, find $m\overset{\frown}{EF}$.

$m\overset{\frown}{EF} =$ _____

28. If $m\overset{\frown}{DF} = 96$ and $m\overset{\frown}{CE} = 40$, find $m\angle FAD$.

$m\angle FAD =$ _____

29. If $m\overset{\frown}{BFD} = 170$ and $m\overset{\frown}{BC} = 110$, find $m\angle BAD$.

$m\angle BAD =$ _____

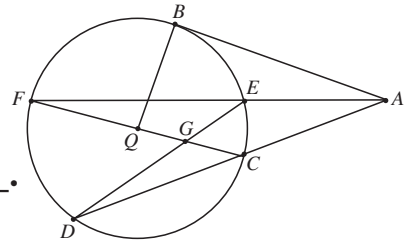
30. Find $m\angle ABQ$.

$m\angle ABQ =$ _____

31. If $m\angle ADE = 26$, find $m\overset{\frown}{CE}$.

$m\overline{CE} =$ _____

Name _____



32. If m∠ADE = 26, find m∠AFC.

m∠AFC = _____

33. ∠DCF ≅ _____.

34. If m∠FAB = 18 and $m\widehat{BE}$ = 80, find $m\widehat{BF}$.

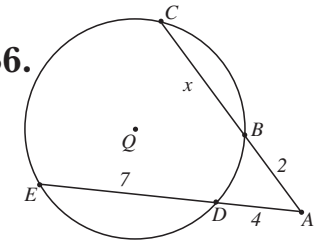
$m\widehat{BF}$ = _____

35. If m∠BQF = 90, find $m\widehat{BF}$.

$m\widehat{BF}$ = _____

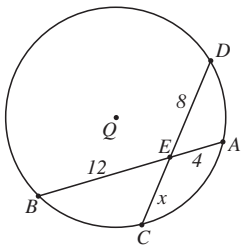
For problems 36 to 41, find the value of *x*, or the indicated angle.

36.



x = _____

37.



x = _____

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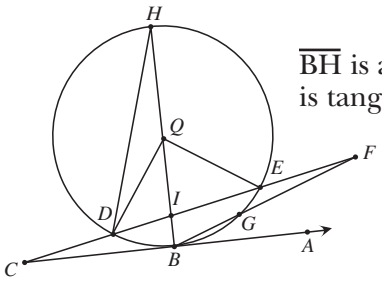
Name _____



$\overline{BH}$ is a diameter of ⊙Q and $\overline{CA}$ is tangent to ⊙Q at point B.

$m\widehat{EG} = 24$
$m\angle HBG = 76$
$m\angle BQD = 40$

Use the figure to the right and the given information to answer problems 26 to 35.

26. Find m∠ABH m∠ABH = _____

27. Find m∠ABF . m∠ABF = _____

28. Find m∠ACF m∠ACF = _____

29. Find m∠DQH m∠DQH = _____

30. Find m∠BQE m∠BQE = _____

31. Find m∠CFB m∠CFB = _____