Find the sum of the measures of the interior angles of each convex polygon.

1. 11-gon

1620

2. 14-gon

2160

3. 17-gon

2700

The measure of an interior angle of a regular polygon is given. Find the number of sides in each polygon.

4. 144

10

5. 156

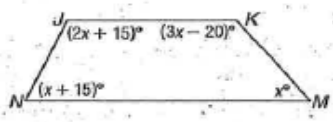
15

6. 160

18

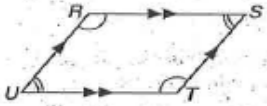
Find the measure of each interior angle using the given information.

7.



m∠J = 115
m∠K = 130
m∠M = 50
m∠N = 65

8. quadrilateral $RSTU$ with $m\angle R = 6x - 4$, $m\angle S = 2x + 8$



m∠R = 128
m∠S = 52
m∠T = 128
m∠U = 52

Find the measures of an interior angle and an exterior angle for each regular polygon. Round to the nearest tenth if necessary.

9. 16-gon 22.5, 157.5

10. 24-gon 165, 15

11. 30-gon 168, 12

Find the measures of an interior angle and an exterior angle given the number of sides of each regular polygon. Round to the nearest tenth if necessary.

12. 14

13. 22 163.6 16.4

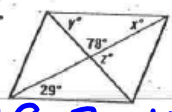
14. 40

15. **CRYSTALLOGRAPHY** Crystals are classified according to seven crystal systems. The basis of the classification is the shapes of the faces of the crystal. Turquoise belongs to the triclinic system. Each of the six faces of turquoise is in the shape of a parallelogram. Find the sum of the measures of the interior angles of one such face.

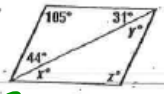
360

Geometry Review Name _____

If each quadrilateral is a parallelogram, find the value of x, y, and z.

1. 

29, 73, 102

2. 

31, 44, 105

3. 

73, 73, 107

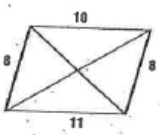
4. Given parallelogram $ABCD$ with $m\angle A = 3x$ and $m\angle B = 4x + 40$, find the measure of each angle.

$m\angle A = m\angle C = 60$ $m\angle B = m\angle D = 120$.

5. In parallelogram $RSTV$, diagonals $\overline{RT}$ and $\overline{VS}$ intersect at Q. If $RQ = 5x + 1$ and $QT = 3x + 15$, find QT.

$QT = 36$

Explain why it is impossible for each figure to be a parallelogram.

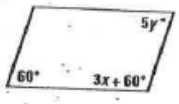
6. 

Opp. sides NOT ≅

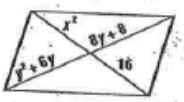
7. 

Opp. angles should be ≅

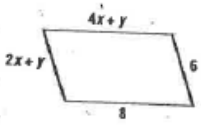
What values must x and y have in order for each quadrilateral to be a parallelogram?

1. 

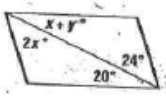
X=20
y=12

2. 

X= ± 4
y=4

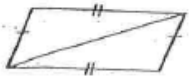
3. 

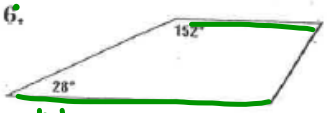
X=1
y=4

4. 

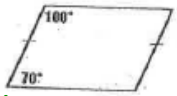
X=12
y=8

Determine if each quadrilateral must be a parallelogram. Justify your answer.

5. 
Yes
Opp sides of a quad ≅

6. 

NO
Opp sides Not ||

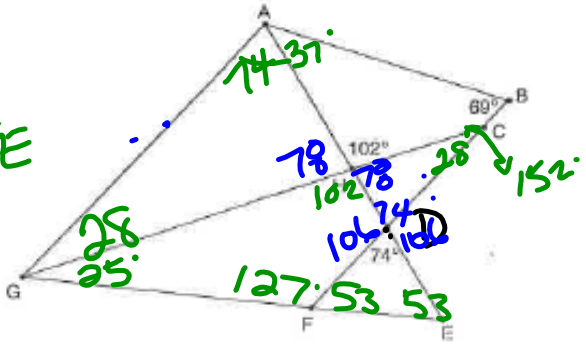
7. 

NO Opp angles Not Suppl.

Answer the following exercises *All, Some,* or *No.*

1. B ___ rectangles are squares.
2. C ___ isosceles trapezoids are parallelograms.
3. B ___ trapezoids are isosceles trapezoids.
4. A ___ rhombuses are quadrilaterals.
5. C ___ kites are parallelograms.
6. B ___ rhombuses are squares.
7. C ___ squares are triangles.
8. B ___ rectangles are regular quadrilaterals.
9. A ___ squares are quadrilaterals, rectangles, rhombuses, and parallelograms.
10. B ___ quadrilaterals have four congruent angles.
11. B ___ rectangles are rhombuses.
12. C ___ trapezoids are parallelograms.
13. C ___ trapezoids have both pairs of opposite sides parallel.
14. B ___ trapezoids have a pair of congruent sides.
15. A ___ kites have two pairs of congruent sides.
16. A ___ squares are regular quadrilaterals.
17. B ___ kites have congruent diagonals.
18. C ___ trapezoids have four congruent sides.
19. B ___ parallelograms have four congruent angles.
20. A ___ isosceles trapezoids have one pair of opposite congruent sides.

72. In the following **figure:** $\overrightarrow{BF}$ and $\overrightarrow{AG}$ are parallel and ΔDEF is an isosceles triangle.



∠BAG ≅ ∠GFE

(a) List two supplementary angles.
(b) What shape is ABDEGHA?
(c) What is the measure of $\angle DFG$?
(d) What is the measure of $\angle BAH$?
(e) How many obtuse interior angles are in the figure? List the angle names and measures.
(f) List one set of vertices that form a pentagon.
(g) List two sets of vertices that form scalene triangles
(h) Which angles are congruent? List all congruent angle sets.

73. A contractor finds that the angle of elevation (the acute angle between the horizontal and the line of sight to the top of a building is 46°35′ as shown below. What is the measure of ∠QRP?

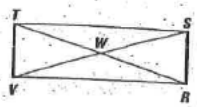
Find the values of x and y in rectangle RSTV.

1. $VW = 2x + y$
   $WS = 36$
   $RS = x - y$
   $VT = 9$

   X=15
   y=6

2. $VR = y$
   $TS = x + 11$
   $VT = y - 3x$
   $RS = x + 2$

   X=3
   y=14



If ABCD is a rectangle, find the value of x.

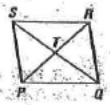
3. $m\angle DAC = 4x + 8$
   $m\angle CAB = 5x - 8$

   X=10

4. $AC = x^2$
   $DB = 6x - 8$

   X=2 OR 4

Use rhombus PQRS and the given information to solve each problem.

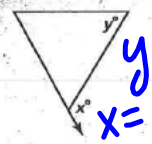


1. If $ST = 13$, find SQ. 26
2. If $m\angle PRS = 17$, find $m\angle QRS$. 34
3. Find $m\angle STR$. 90
4. If $SP = 4x - 3$ and $PQ = 18 + x$, find x. 7

HJKL is an isosceles trapezoid with bases $\overline{HJ}$ and $\overline{LK}$. Use the figure and the given information to solve each problem.

1. If $LK = 30$ and $HJ = 42$, find RS. 36
2. If $RS = 17$ and $HJ = 14$, find LK. 20
3. If $RS = x + 5$ and $HJ + LK = 4x + 6$, find RS. 7
4. If $m\angle LRS = 66$, find $m\angle KSR$. 66
5. Find the length of the median of a trapezoid with vertices at (3, 1), (10, 1), (7, 9), and (5, 9). 4.5

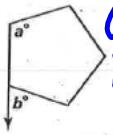
Find the values of the variables for each polygon. Each is a regular polygon.

1. 

y=60
x=120

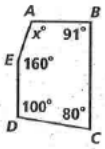
2. 

360/7 = 51.4

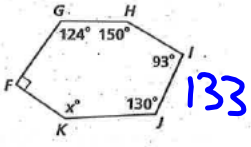
3. 

a=108
b=72

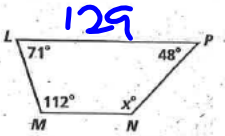
Find the missing angle measures.

4. 

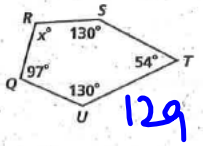
109

5. 

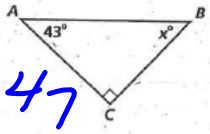
133

6. 

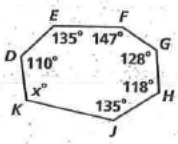
129

7. 

129

8. 

47

9. 

127

For a regular 12-sided polygon, find each of the following.

10. the measure of an exterior angle 30°

11. the measure of an interior angle 150°

The measure of an interior angle of a regular polygon is given. Find the number of sides.

12. 120 6

13. 108 5

14. 135 8

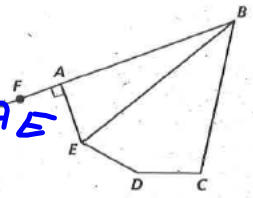
Identify each item in Exercises 15–18 in the figure.

15. quadrilateral BEDC

16. exterior angle ∠FAE

17. pair of supplementary angles ∠FAE, ∠BAE

18. pentagon ABCDE



19. A regular polygon has an exterior angle of measure 18. How many sides does the polygon have?

$\frac{360}{18} = 20 = n$