

Name: _____
 ACP Geometry Unit 5 Review

B 1. Find the sum of the measures of the interior angles of a convex 30-gon.

- A 5400 **B 5040** C 360 D 168

$$(30-2) \cdot 180$$

H 2. Find the sum of the measures of the exterior angles of a convex 21-gon.

- F 21 G 180 **H 360** J 3420

B 3. If the measure of each interior angle of a regular polygon is 108, find the measure of each exterior angle.

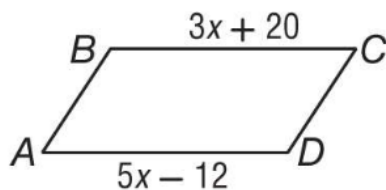
- A 18 **B 72** C 90 D 108

$$180 - 108 = 72$$



H 4. For parallelogram ABCD, find the value of x.

- F 4 **H 16**
 G 10.25 J 21.5



$$\begin{aligned} 3x - 12 &= 3x + 20 \\ 2x &= 32 \\ x &= 16 \end{aligned}$$

D 5. Which of the following is a property of a parallelogram?

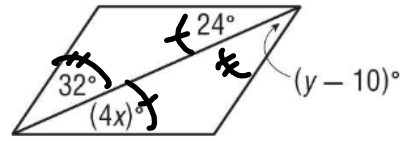
- A The diagonals are congruent. C The diagonals are perpendicular.
 B The diagonals bisect the angles. **D The diagonals bisect each other.**

F

6. Find the values of x and y so that $ABCD$ will be a parallelogram.

- F $x = 6, y = 42$
- G $x = 6, y = 22$
- H $x = 20, y = 42$
- J $x = 20, y = 22$

$$\begin{aligned} 24 &= 4x & 32 &= y - 10 \\ 6 &= x & 42 &= y \end{aligned}$$

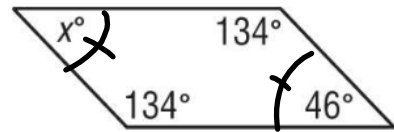


B

7. Find the value of x so that this quadrilateral is a parallelogram.

- A 44
- B 36
- C 90
- D 134

$$x = 46$$



D

8. Which of the following is a property of all rectangles?

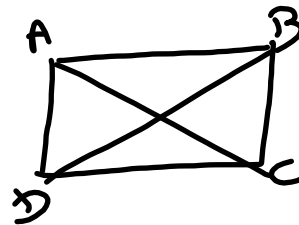
- A four congruent sides
- B diagonals bisect the angles
- C diagonals are perpendicular
- D four right angles.

F

9. $ABCD$ is a rectangle with diagonals \overline{AC} and \overline{BD} . If $AC = 2x + 10$ and $BD = 56$, find the value of x .

- F 23
- G 33
- H 78
- J 122

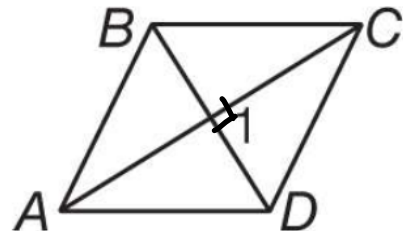
$$\begin{aligned} 2x + 10 &= 56 \\ 2x &= 46 \\ x &= 23 \end{aligned}$$



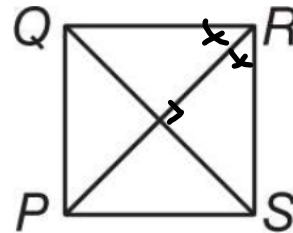
H

10. For rhombus $ABCD$, find $m\angle 1$.

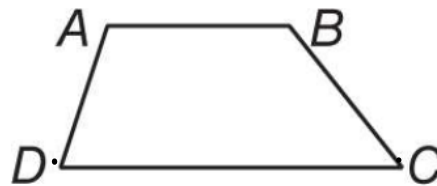
- F 45
- H 90
- G 60
- J 120



- B 11. Find $m\angle PRS$ in square $PQRS$.
 A 30 C 60
 B 45 D 90

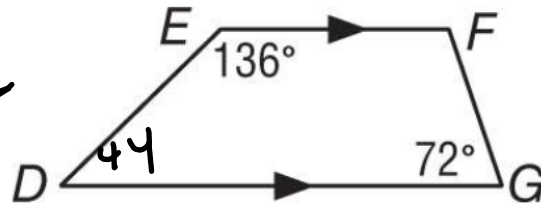


- J 12. Choose a pair of base angles of trapezoid $ABCD$.
 F $\angle A, \angle C$ H $\angle A, \angle D$
 G $\angle B, \angle D$ J $\angle D, \angle C$



- A 13. In trapezoid $DEFG$, find $m\angle D$.
~~A 44~~ C 108
 B 72 D 136

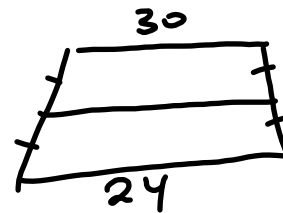
$$\begin{array}{r} 180 \\ -136 \\ \hline 44 \end{array}$$



14. The hood of Olivia's car is the shape of a trapezoid. The base bordering the windshield measures 30 inches and the base at the front of the car measures 24 inches. What is the width of the median of the hood?
 F 25 in. G 27 in. H 28 in. J 29 in.

$$\frac{1}{2}(30+24)$$

$$\frac{1}{2}(54) = 27$$

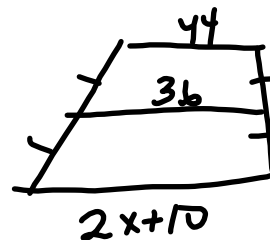


- A 15. The length of one base of a trapezoid is 44, the median is 36, and the other base is $2x + 10$. Find the value of x .
 A 9 B 17 C 21 D 40

$$2 \cdot 36 = \frac{1}{2}(44 + 2x + 10)$$

$$72 = 54 + 2x$$

$$\frac{-54}{18} = \frac{-2x}{18} \quad x = 9$$



J

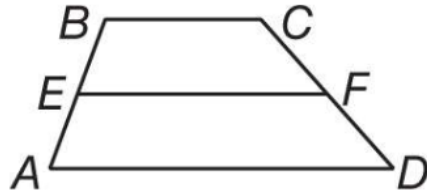
16. Given trapezoid $ABCD$ with median \overline{EF} , which of the following is true?

F $EF = \frac{1}{2} AD$

H $AB = EF$

G $AE = FD$

J $EF = \frac{BC + AD}{2}$



A

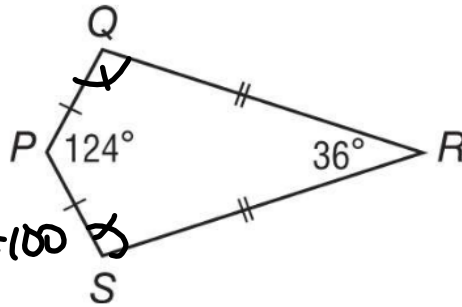
17. $PQRS$ is a kite. Find $m\angle S$.

- A 100
- B 160

- C 200
- D 360

$$360 - (124 + 36)$$

$$360 - 160 = \frac{200}{2} = 100$$



F

18. $JKLM$ is a kite, find JM .

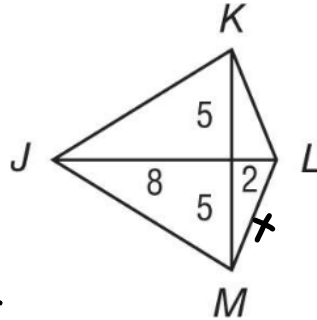
- A $\sqrt{29}$
- G $\sqrt{89}$

- H $\sqrt{13}$
- J 11

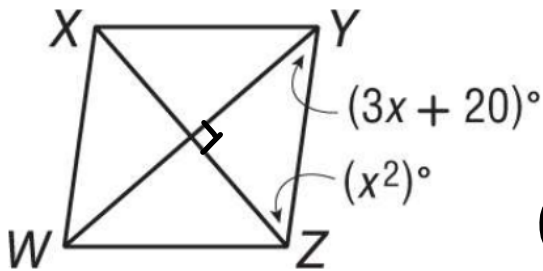
$$x^2 = 5^2 + 2^2$$

$$x^2 = 25 + 4$$

$$x^2 = 29 \quad \sqrt{29} = x$$



19. Find x and $m\angle WYZ$ in rhombus $XYZW$.



$x = 3$

$$x^2 + 3x + 20 = 90$$

$$x^2 + 3x - 70 = 0 \quad -70$$

$$(x + 10)(x - 7) = 0 \quad \wedge$$

$$x + 10 = 0 \quad x - 7 = 0 \quad 10 + -7 = 3$$

$$x = -10 \quad x = 7$$

Determine the most precise name of quadrilateral $ABCD$ from the information given.

$$\overline{AE} \cong \overline{CE}, \overline{BE} \cong \overline{DE}$$

$$\triangle ABC \cong \triangle ADC, \overline{AB} \neq \overline{BC}$$

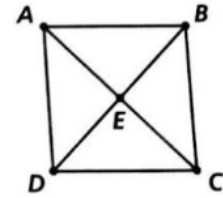
parallelogram $ABCD$ with $\overline{AC} \cong \overline{BD}$ and $\overline{AD} \perp \overline{DC}$

$$\overline{AB} \parallel \overline{DC}, \angle CAD \cong \angle BCA$$

$$\angle ABC \cong \angle BCD \cong \angle CDA \cong \angle DAB, \overline{AC} \perp \overline{BD}$$

$$\overline{AB} \cong \overline{BC} \cong \overline{CD} \cong \overline{DA}$$

$$\overline{AB} \parallel \overline{DC}, m\angle CBD \neq m\angle ADB, \overline{AC} \cong \overline{BD}$$



Relationships Among Quadrilaterals

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

1. ? rectangles are squares.
2. ? isosceles trapezoids are parallelograms.
3. ? trapezoids are isosceles trapezoids.
4. ? rhombuses are quadrilaterals.
5. ? kites are parallelograms.
6. ? rhombuses are squares.
7. ? squares are triangles.
8. ? rectangles are regular quadrilaterals.
9. ? squares are quadrilaterals, rectangles, rhombuses, and parallelograms.

10. ? quadrilaterals have four congruent angles.
11. ? rectangles are rhombuses.
12. ? trapezoids are parallelograms.
13. ? trapezoids have both pairs of opposite sides parallel.
14. ? trapezoids have a pair of congruent sides.
15. ? kites have two pairs of congruent sides.
16. ? squares are regular quadrilaterals.
17. ? kites have congruent diagonals.
18. ? trapezoids have four congruent sides.
19. ? parallelograms have four congruent angles.
20. ? isosceles trapezoids have one pair of opposite congruent sides.

Directions: Check off the properties that are **always** true for the following shapes

Description	Parallelogram	Rectangle	Rhombus	Square
Opposite sides are parallel				
Opposite sides are congruent				
Opposite angles are congruent				
Consecutive angles are supplementary				
Diagonals bisect each other				
All angles are 90 degrees				
Diagonals are congruent				
All sides are congruent				
Diagonals are angle bisectors				
Diagonals are perpendicular				