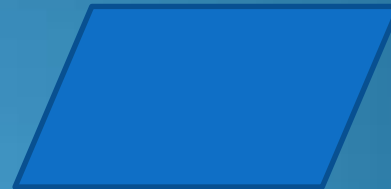
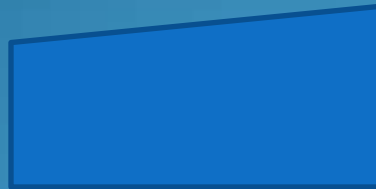
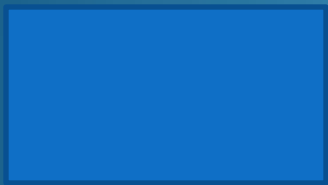


# MATHEMATICS



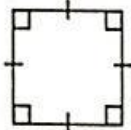

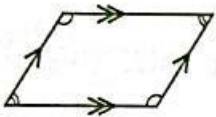
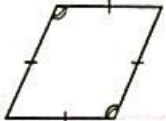
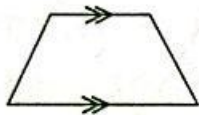
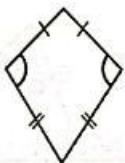
Topic: Properties of quadrilaterals.

- ❖ A quadrilateral is a four-sided shape. All quadrilaterals have four sides and four interior angles.



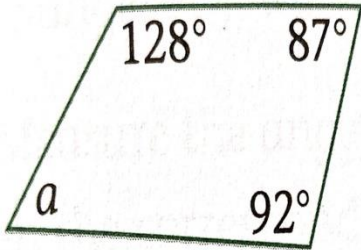
- ❖ The sum of the interior angles of any quadrilateral is  $360^\circ$

# Different types of quadrilaterals

Quadrilateral	Shape	Angles	Equal sides	Parallel sides	Diagonals
Square		All four are $90^\circ$	All sides are equal	Opposite sides parallel	Diagonals are equal and bisect at $90^\circ$
Rectangle		All four are $90^\circ$	Opposite sides are equal	Opposite sides parallel	Diagonals are equal and bisect each other
Parallelogram		Opposite angles are equal	Both pairs of opposite sides are equal	Both pairs of opposite sides parallel	Diagonals not equal; bisect each other
Rhombus		Opposite angles are equal	All sides are equal	Opposite sides parallel	Diagonals not equal; bisect each other at $90^\circ$
Trapezium		No angles equal	No sides equal	One pair opposite sides parallel	Diagonals not equal; do not bisect
Kite		One pair opposite angles are equal	Both pairs of adjacent sides are equal	No sides parallel	One diagonal bisected; diagonals meet at $90^\circ$

# Worked example

Find the size of angle  $a$ :



Solution

$$a + 128^\circ + 87^\circ + 92^\circ = 360^\circ$$

$$a + 307^\circ = 360^\circ$$

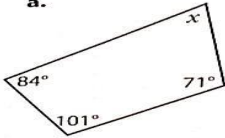
$$a = 360^\circ - 307^\circ$$

$$a = 53^\circ$$

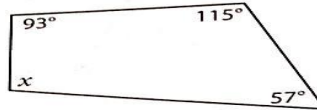
# Activity

4. Find the size of the angle  $x$ . Show your workings.

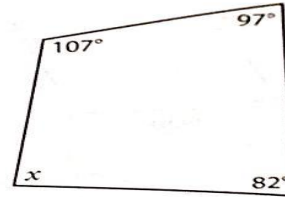
a.



b.

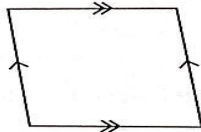


c.

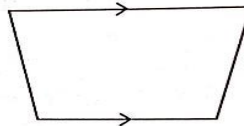


5. Name each figure.

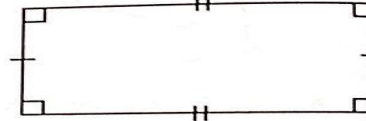
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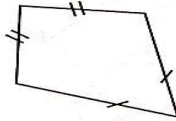
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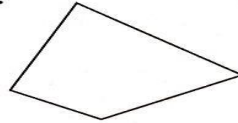
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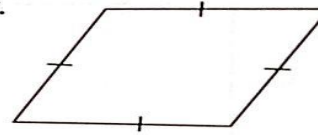
d.



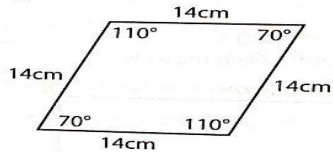
e.



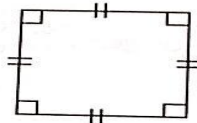
f.



g.



h.



6. a. What is the difference between a parallelogram and a rectangle?  
 b. Name all the properties of a rectangle.  
 c. Name all the properties of a parallelogram.
7. a. Which of the following is NOT a property of a rhombus?  
 i. Opposite sides are equal.  
 ii. Opposite angles are equal.  
 iii. The internal angles are right angles.  
 iv. Opposite sides are parallel.