

Warm-Up

1

Calculate.

$10 \times 2 =$	$12 \times 4 =$	$15 \times 2 =$	$40 \times 4 =$	$3 \times 15 =$
$40 \times 2 =$	$20 \times 6 =$	$15 \times 4 =$	$4 \times 20 =$	$5 \times 50 =$
$100 \times 2 =$	$50 \times 4 =$	$10 \times 8 =$	$25 \times 2 =$	$25 \times 4 =$
$30 \times 2 =$	$30 \times 8 =$	$25 \times 10 =$	$35 \times 2 =$	$40 \times 6 =$

2

Compare expressions ($<$, $>$, $=$):

$7 \times 5 \dots 6 \times 8$	$12 + 12 + 12 \dots 12 \times 4$
$3 \times 9 \dots 5 \times 5$	$4 \times 6 \dots 3 \times 8$
$5 \times 9 \dots 5 \times 5 + 5$	$10 \times 3 \dots 5 \times 5 + 5$
$3 \times 9 \dots 4 \times 7 + 2$	$15 + 15 + 15 \dots 10 \times 5 - 5$

3

Find all pairs of numbers, such that their product is:

- a) 20 _____
- b) 30 _____
- c) 40 _____
- d) 50 _____

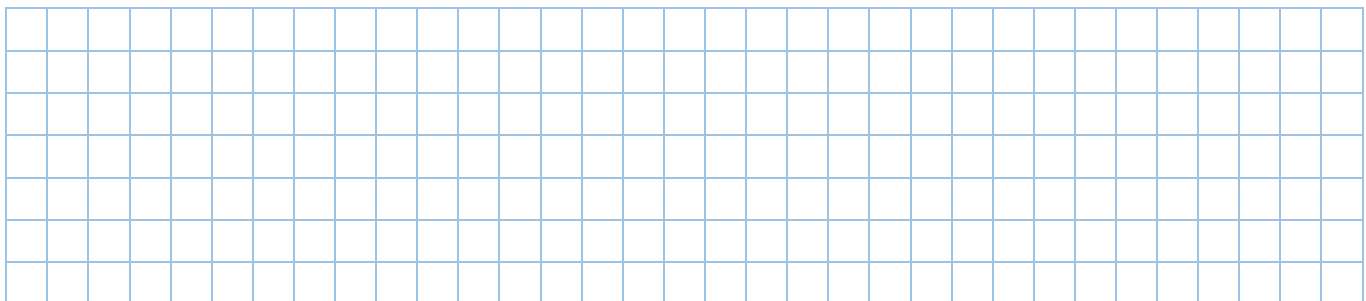
4

Solve equations and check your answer:

a) $14 + x = 26$

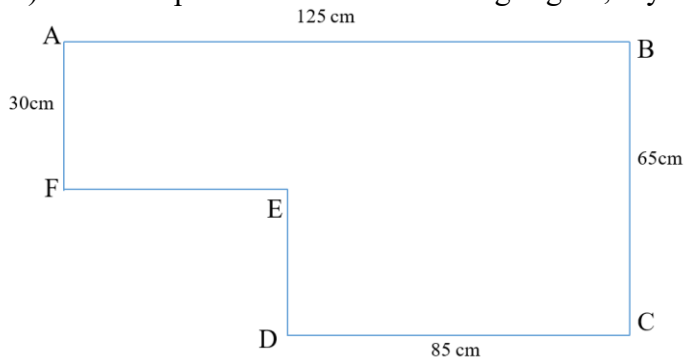
b) $x - 18 = 33$

c) $89 - a = 71$



Homework Review

- 1) Find the perimeter of the following figure, if you know some of the sides:



- 2) At the school's art exhibition 40 drawings were presented. Out of them 8 drawings were made in pencil, and the rest were made with paints. How many times more drawings are done with paints than with a pencil?

New Material

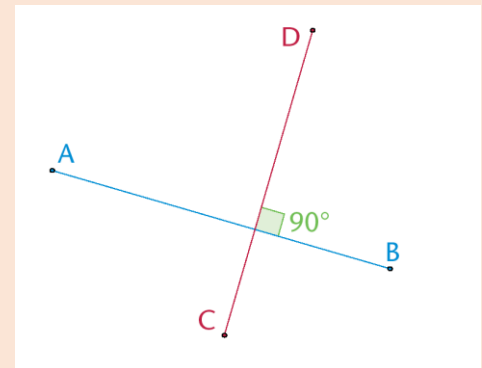
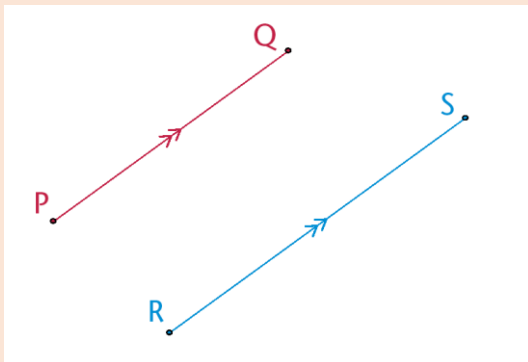
Parallel and Perpendicular lines.

The sketch on the right shows two **perpendicular** lines.

We say: AB is perpendicular to DC.

We write: $AB \perp DC$

Remember: perpendicular lines always intersect one another with a 90° angles.



The sketch on the left shows two **parallel** lines.

We say: PQ is parallel to RS.

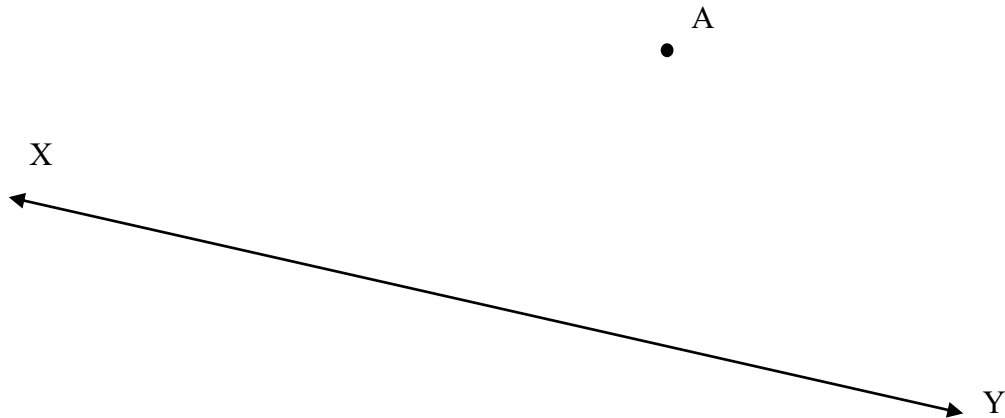
We write: $PQ \parallel RS$

The arrows on the middle of the lines show that the lines are parallel to each other.

Remember: Parallel lines never intersect one another.

Draw the line which is parallel to the line XY and that passes through point A.

1. Use your protractor to draw a line that goes through A and is at 90° to XY. Label the point C where your new line intersects line XY.



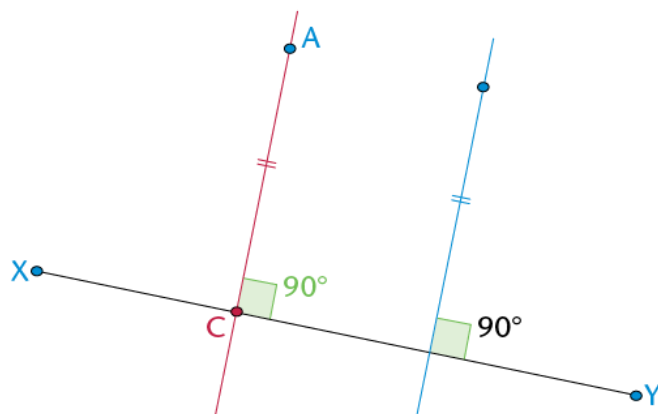
2. Measure the perpendicular distance between the point and the line.

Write down the length of AC: _____

3. Draw a point that is the same distance from the line.

Draw another line that is perpendicular to line XY. Mark off the same length as AC on that line.

The sketch below shows what you must get. Mark the new point

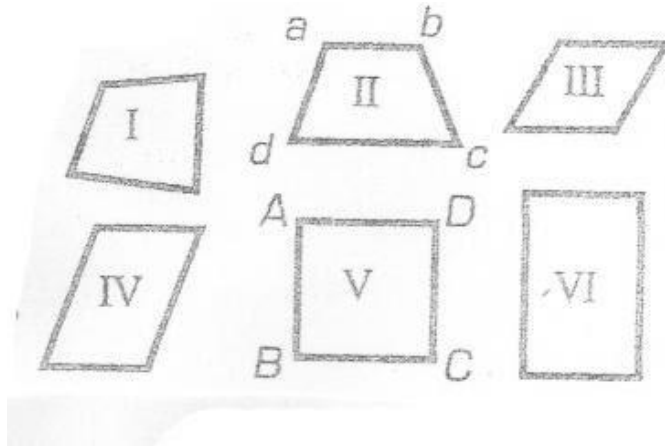


4. Draw the parallel line.

Join A with the new point that is an equal distance away from XY. You now have a parallel line.

Quadrilateral

A Quadrilateral has four-sides, it is 2-dimensional (a flat shape), **closed** (the lines join up), and has **straight** sides.



A quadrilateral that has 2 parallel sides is called trapezoid.

What is the difference between the trapezoid II and the quadrilaterals III, IV, V, and VI?

How many parallel sides do these quadrilaterals have?

A quadrilateral that is formed by 2 pairs of the parallel sides is called a parallelogram.

What is the difference between the quadrilateral IV and the parallelogram III?

How are the sides related to each other?

A parallelogram with 4 equal (or congruent) sides is called rhombus.

Is there a parallelogram that has only 3 congruent (equal) sides?

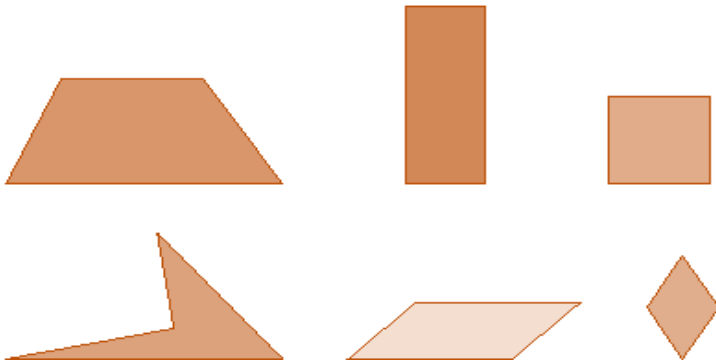
Why or why not?

What is the difference between the quadrilaterals V and VI and the other quadrilaterals on the picture?

What kind of angles do they have?

Quadrilateral

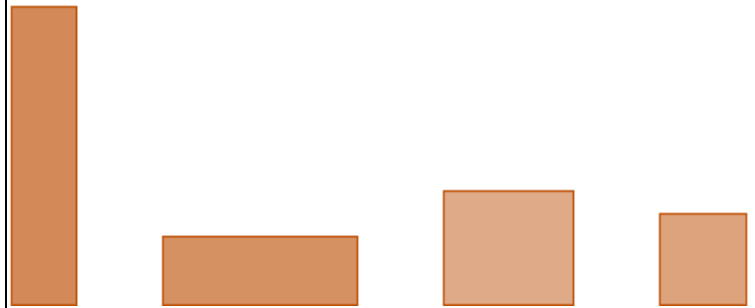
A four-sided polygon.



The sum of the angles of a quadrilateral is 360° degrees.

Rectangle

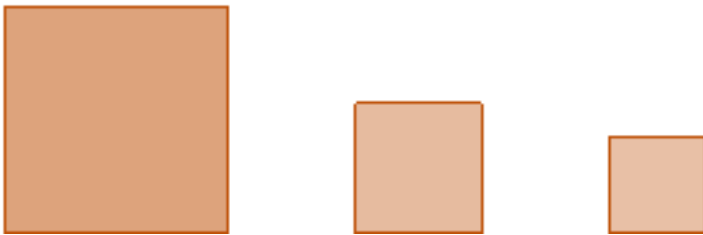
A four-sided polygon with all right angles



The sum of the angles of a rectangle is 360° degrees

Square

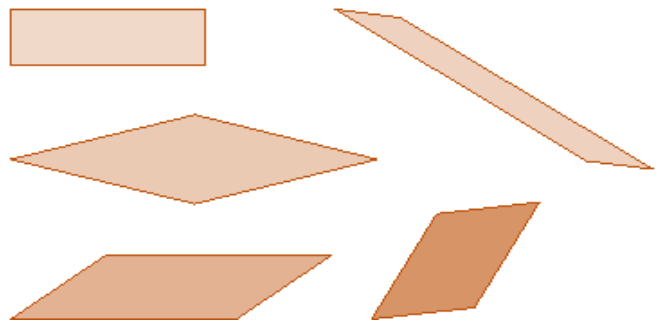
A four-sided polygon with equal-length sides meeting at right angles.



The sum of the angles of a square is 360° degrees

Parallelogram

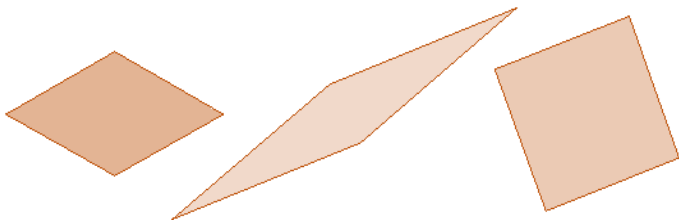
A four-sided polygon with two pairs of parallel sides.



The sum of the angles of a parallelogram is 360° degrees

Rhombus

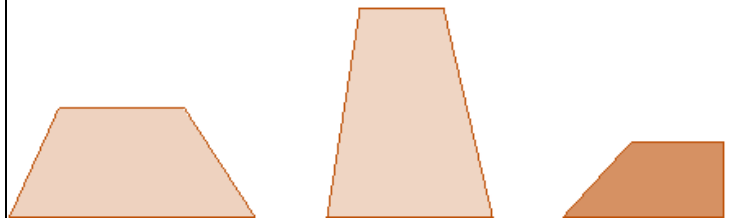
A four-sided polygon with all four sides of equal length



The sum of the angles of a rhombus is 360° degrees

Trapezoid

A four-sided polygon with an exactly one pair of parallel sides. The two sides that are parallel are called the bases of the trapezoid.



The sum of the angles of a trapezoid is 360° degrees

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Choose the correct statement(s) and circle it:

- a) Any square is a parallelogram.
- b) Any parallelogram is a square.
- c) Any rectangle is a parallelogram.
- d) Any parallelogram is a rectangle.

7

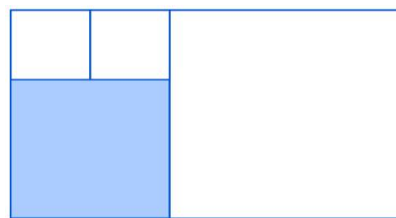
What shape am I?

- a) four sides; all sides equal; four right angles _____
- b) four sides; opposite sides equal; four right angles _____
- c) four sides; opposite sides parallel; no right angles _____
- d) four sides; exactly two sides parallel _____
- e) four sides; opposite sides equal; no sides perpendicular _____
- f) four sides; opposite sides parallel; adjacent sides perpendicular _____
- g) four sides; all sides equal; no sides perpendicular _____
- h) four sides; no sides parallel; no sides perpendicular _____

8

Quadrilateral is divided in squares. Find a perimeter of a quadrilateral if one side of the shaded square is 8 cm.

P = _____



Challenge yourself

9

a) One penny out of three is fake. It is lighter than the others. How can you identify the fake coin by using a balance scale like the one shown in the picture? You can only weigh once!



b) How can you find one fake penny out of 9 pennies if you can only weigh twice?