9 – 1
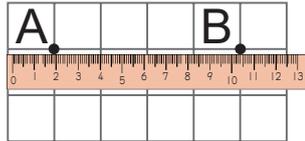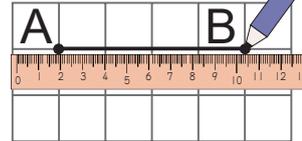
Straight Lines

Instruction How to draw a straight line using a ruler

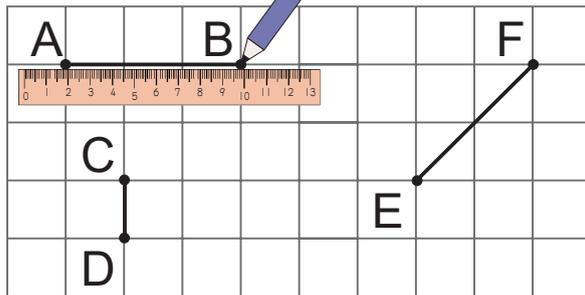1. Place and hold the ruler under the two points.

2. Draw a line to connect the two points.

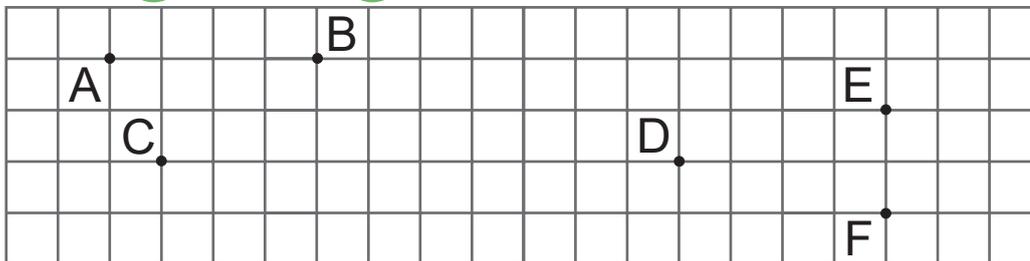**Example** Bound the following pair of points to draw lines by using a ruler.
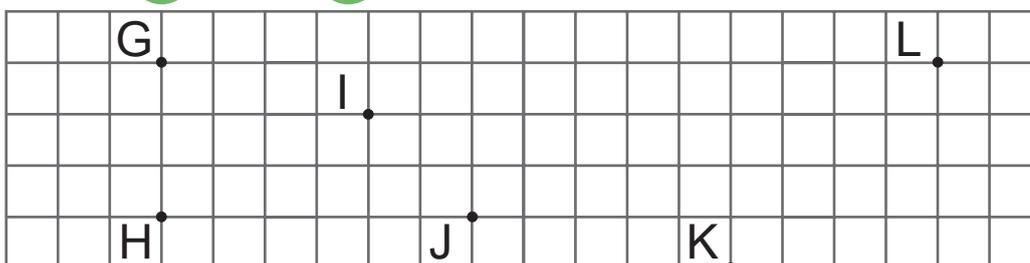
1 AB **2** CD **3** EF

When you draw a straight line, make sure to press the ruler firmly.

Bound the following pair of points to draw lines by using a ruler.
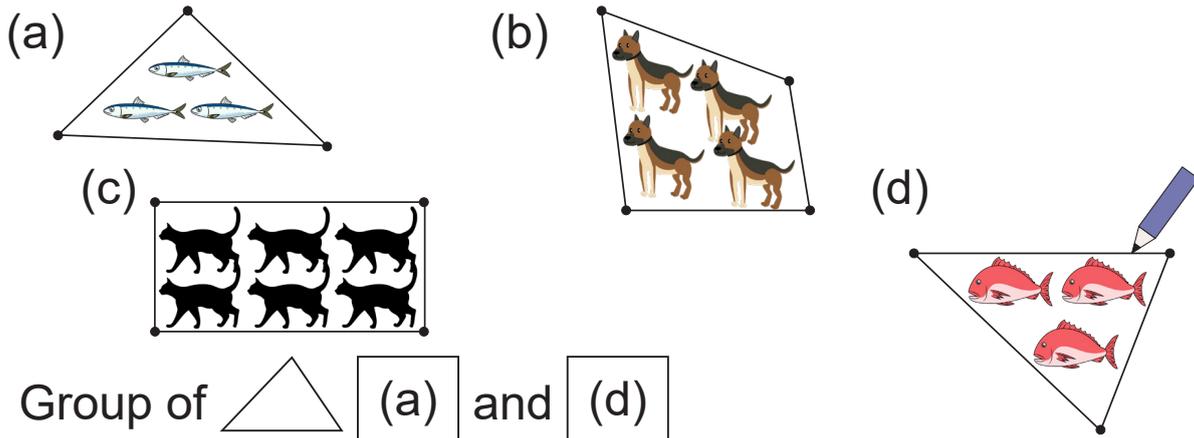
1 AB **2** CD **3** EF
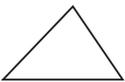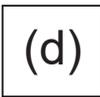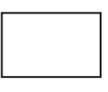
4 GH **5** IJ **6** KL

9 – 2 Triangles and Quadrilaterals
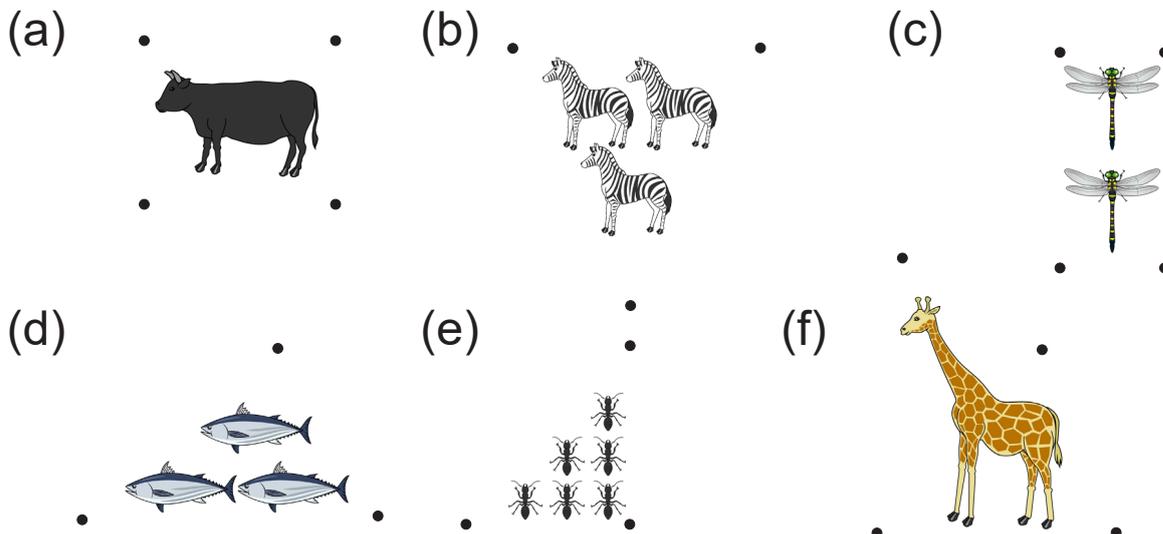## Finding Triangles and Quadrilaterals

Example Connect the dots to enclose the same animals into groups. Separate the resulting shapes into two groups.
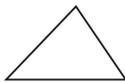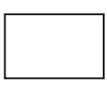
(a)

(b)

(c)

(d)

Group of △ (a) and (d)

Group of ☐ (b) and (c)

Connect the dots to enclose the same animals into groups. Separate the resulting shapes into two groups.

(a)

(b)

(c)

(d)

(e)
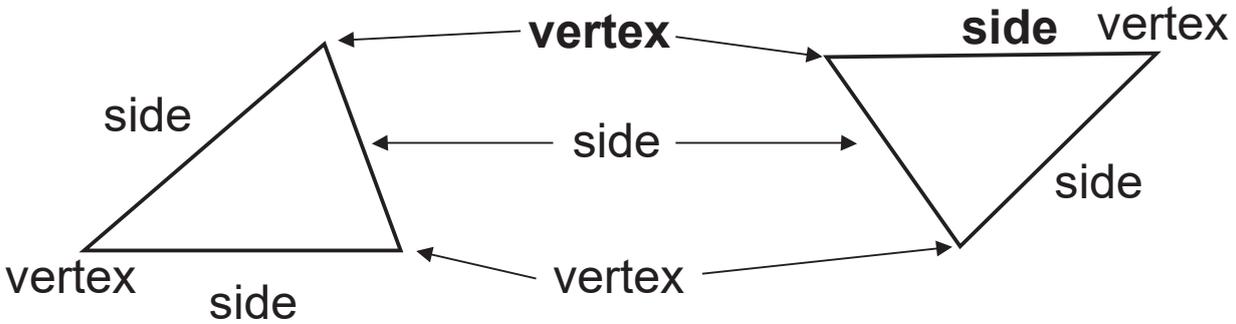
(f)

Group of △ ☐ , ☐ , and ☐

Group of ☐☐ , ☐ , and ☐

● A closed shape made of three straight lines is called a **triangle**.
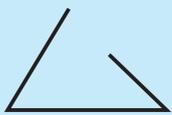● A closed shape made of four straight lines is called a **quadrilateral**.

9 – 3 Triangles

Instruction Triangles

vertex side vertex

side side side

vertex side vertex
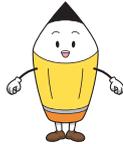
- Each straight line that makes a triangle is called a side.
- Each point where the sides meet is called a vertex.
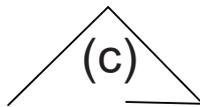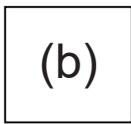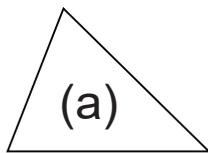- Triangles have 3 sides and 3 vertices.

It's not triangle.

Example Answer the following questions.

1 How many vertexes does a triangle have?

2 Find the triangles.

3 vertexes.
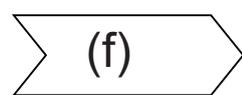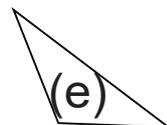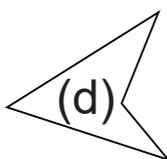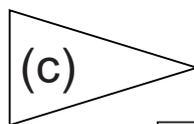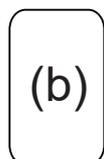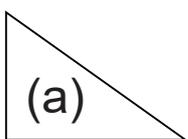
(a) (b) (c)

(a) is triangle.

1 How many sides and vertexes do triangles have?

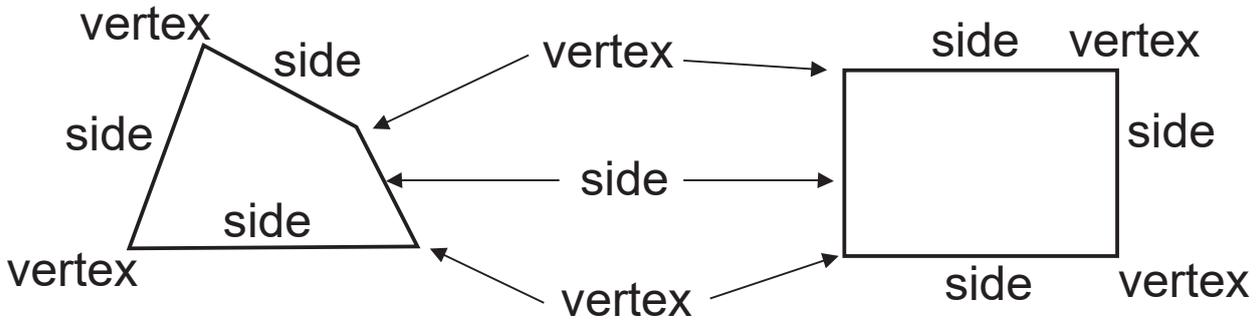Triangles have ☐ sides and ☐ vertexes.

2 Find the triangles.

(a) (b) (c) (d) (e) (f)

☐ are triangles.

9 – 4 Triangles and Quadrilaterals
Quadrilaterals

Instruction Quadrilaterals

vertex
side
side
side
vertex

vertex
side
vertex

side   vertex
side
side   vertex
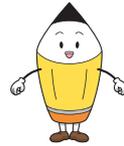
Quadrilaterals have 4 sides and 4 vertices.
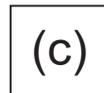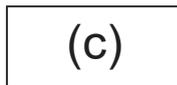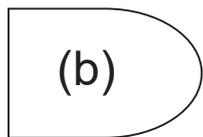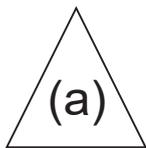
This is not a quadrilateral.

Example Answer the following questions.

1. How many vertexes does a quadrilateral have?
2. Find the quadrilaterals.

4 vertexes.

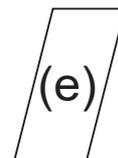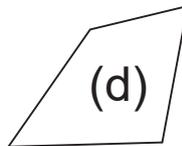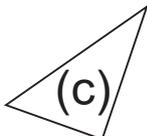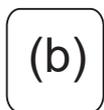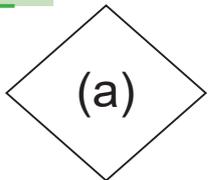(a)   (b)   (c)   (c) is quadrilateral.

1. How many sides and vertices do quadrilaterals have?

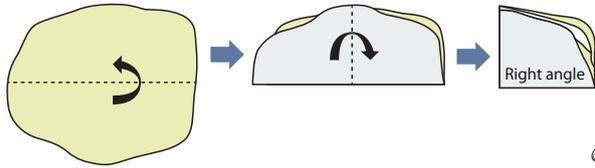Quadrilaterals have ⬚ sides and ⬚ vertexes.

2. Find the quadrilaterals.

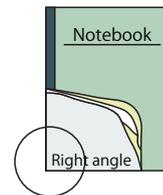(a)   (b)   (c)   (d)   (e)   (f)

⬚ are quadrilaterals.

Right Angle

Instruction Make a right angle by folding a piece of paper.
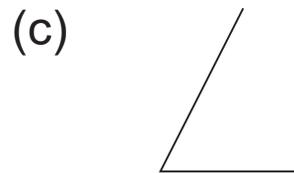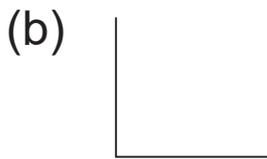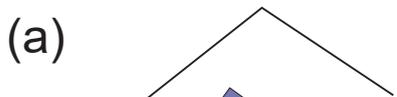
Right angle

The shape of the corner that is made by folding paper is called a **right angle**.

See if the shape of the corner of your notebook has a right angle.

Place the paper onto the corner of your notebook to check if they are the same as each other.

Notebook

Right angle

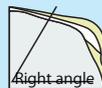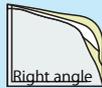**Example** Which of the following has a right angle? Find a right angle by placing the folded paper.

(a)   (b)   (c)

(b) has a right angle.

Place the folded paper onto the shape and check if they match each other or not.

Right angle   Right angle

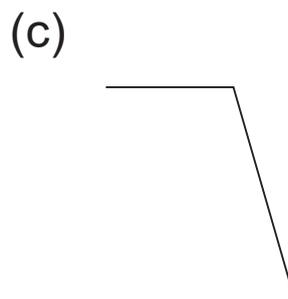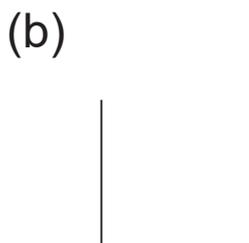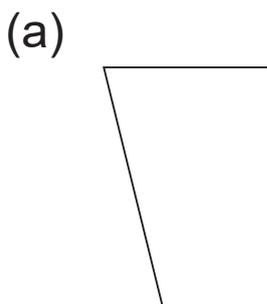Which of the following is a right angle? Find a right angle by placing the folded paper.

(a)   (b)   (c)   (d)

9 - 6 Triangles and Quadrilaterals
Rectangles
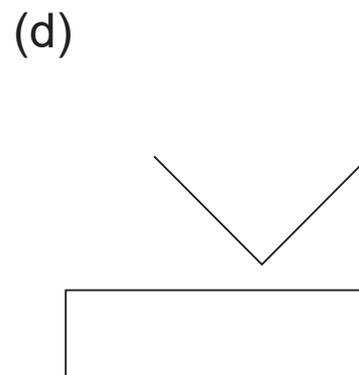
Instruction Make a rectangle by folding a piece of paper.
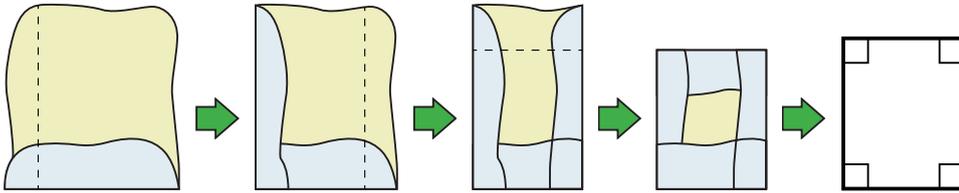
A quadrilateral with four right angles is called **rectangle**.
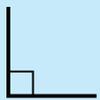
This mark indicates a right angle.

Example 1 Find the rectangle.

(a) (b) (c)

How many right angles do they have?

(c) is rectangle.

1 Find the rectangles.

(a) (b) (c) (d) (e)

(f) (g) (h) (i)
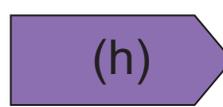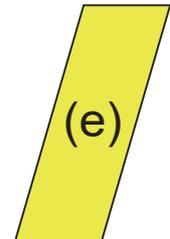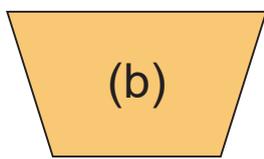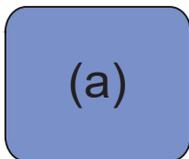
are rectangles.

Example 2 Draw 2 rectangles by connecting the dots.

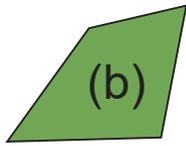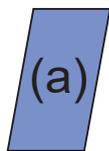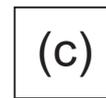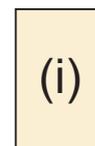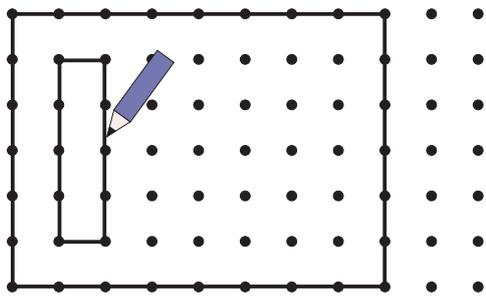You can also draw a rectangle inside of another one.
The answer is not one.

2 Draw as many rectangles as possible by connecting the dots.

Example 3 Draw a rectangle with 5 cm sides and 2 cm sides.

1 cm

1 cm
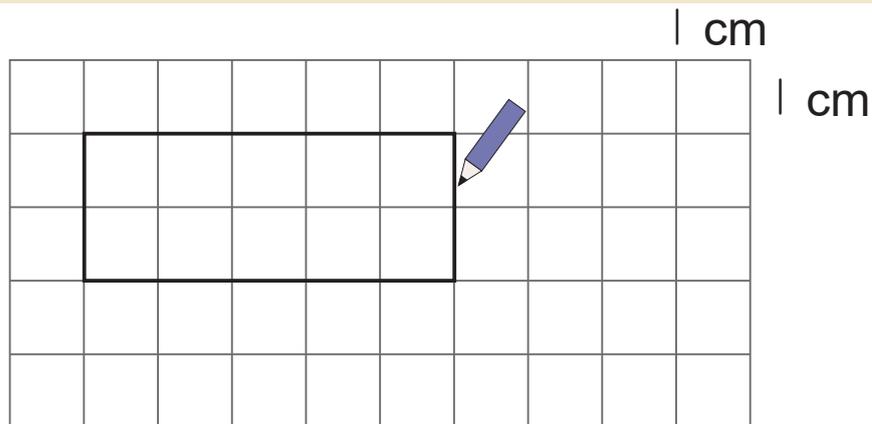
3 Draw the following rectangles.

① with 2 cm sides and 3 cm sides
② with 3 cm sides and 7 cm sides

1 cm

1 cm
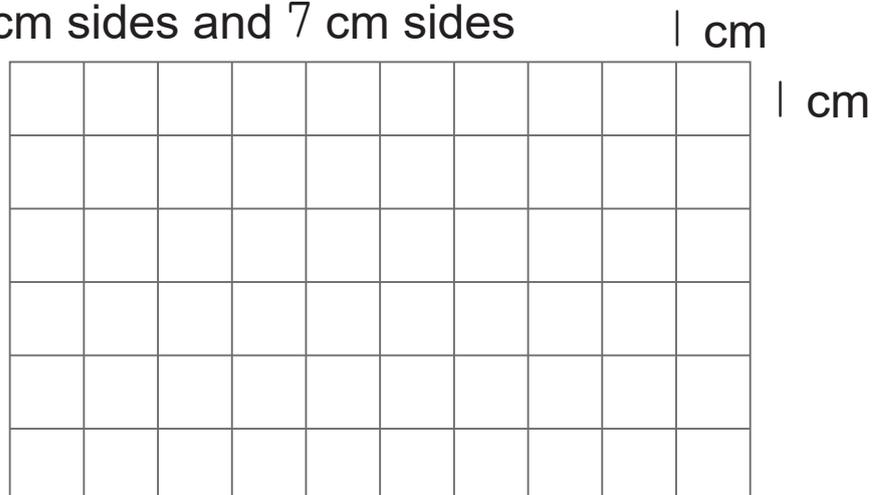
9 - 7 Triangles and Quadrilaterals
Squares

Instruction Make a square by folding and cutting a piece of paper.

Fold a rectangular paper and cut it like above.
The mark indicates the lines are the same length

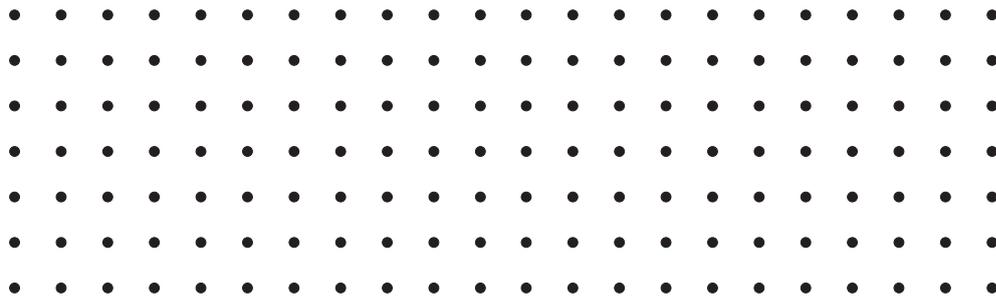A quadrilateral with four right angles and four equal sides is called a **square**.

Example 1 Find the square.

(a)

(b)

(c)

(b) is square.

1 Find the square.

(a)

(c)

(b)

(d)

(e)

(f)
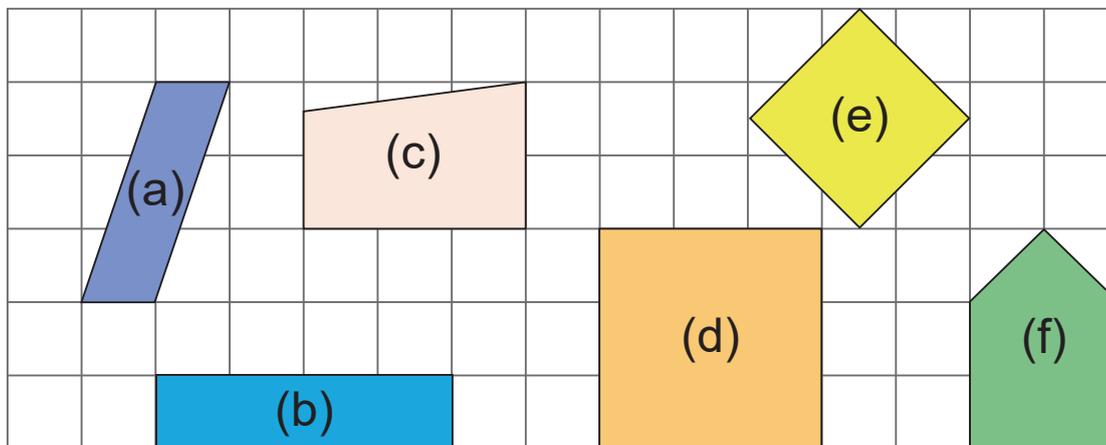
are squares.

Example 2 Make a patterns by drawing ☐ and ■ .
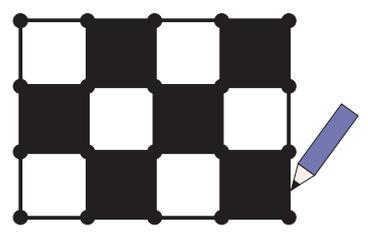
This pattern is made by alternating black and white. But, the answer is not one.

2 Make a patterns by drawing ☐ and ■ .
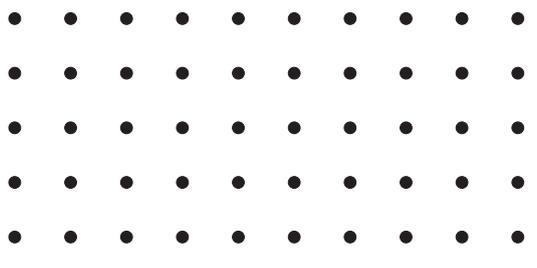
The answer is not one. Let's take a look at the patterns made by friends.
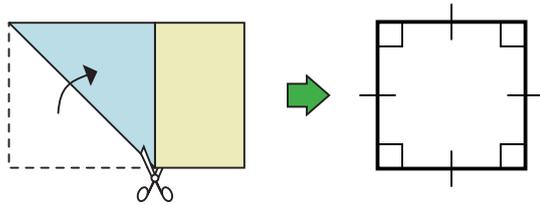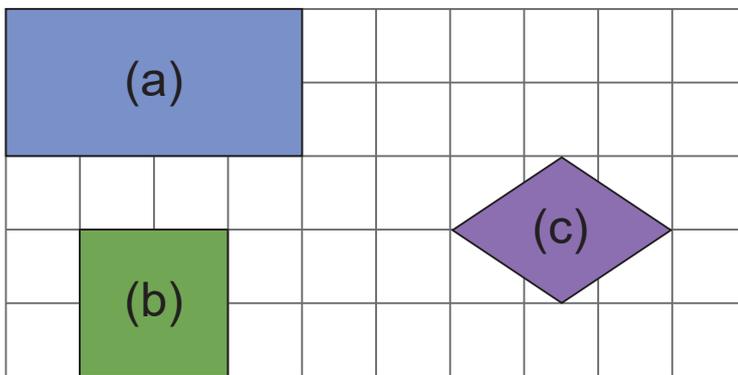
Example 3 Draw a square with 4 cm sides.

| cm
| cm

3 Draw the following squares.

① with 2 cm sides   **②** with 3 cm sides

③ with 6 cm sides

| cm
| cm

9 – 8
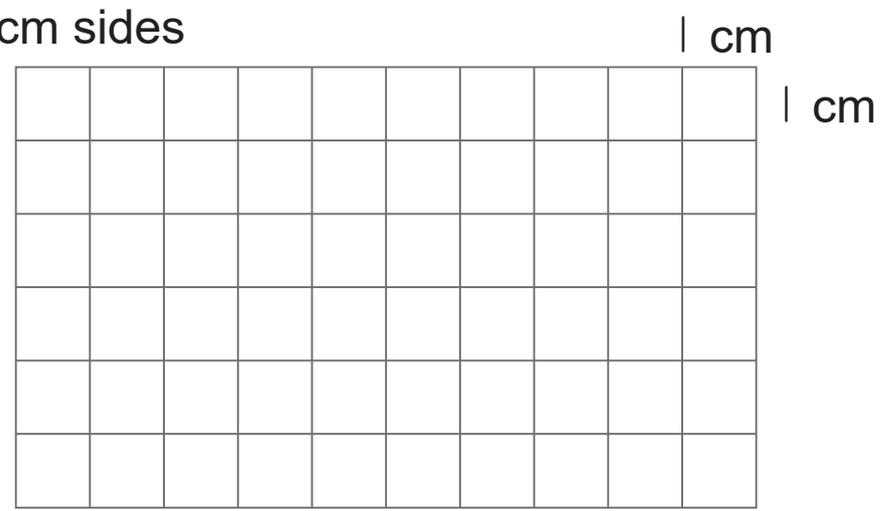
Right Triangles

Instruction What is a right triangle?

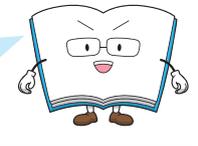A triangle with one right angle is called a **right triangle**.

Example 1 Find right triangle.

(a)

(c)

(b)

(d)

(a) is right triangle

1 Find right triangles.

(a)

(e)

(c)

(b)

(d)

(f)

(g)
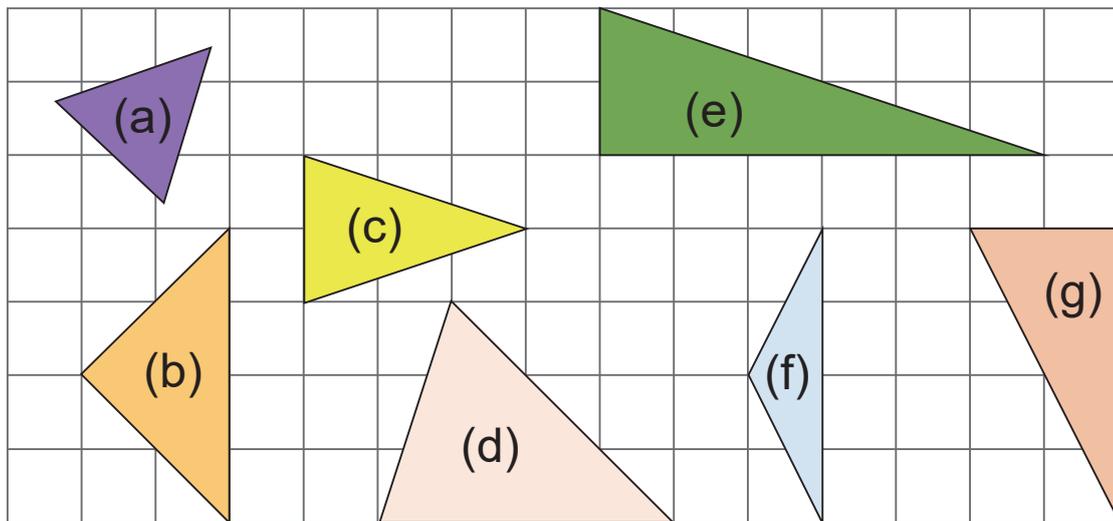
are right triangles.

Example 2 Make a patterns by drawing ◺ and ◣ .

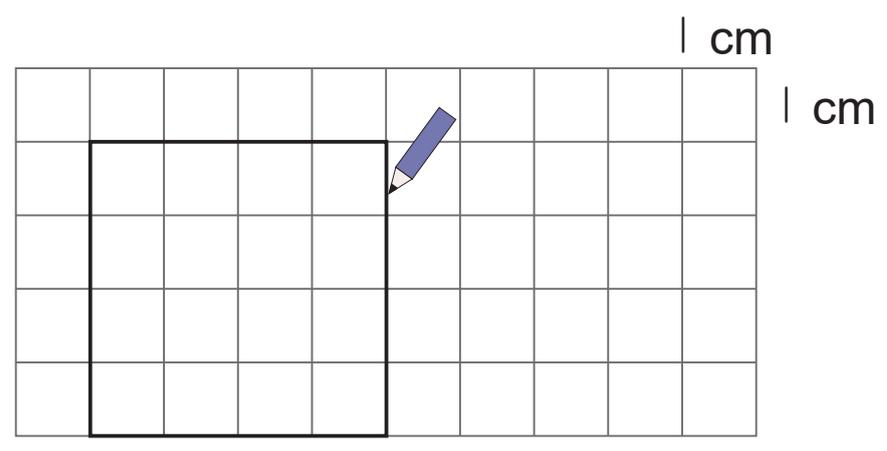The answer is not one. Let's take a look at the patterns made by friends.

2 Make a patterns by drawing ◹ and ◤ .

The answer is not one. Let's take a look at the patterns made by friends.

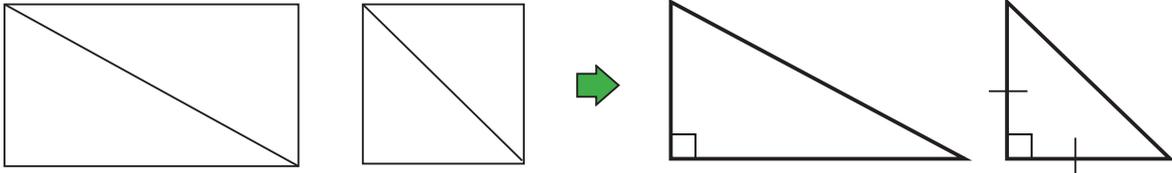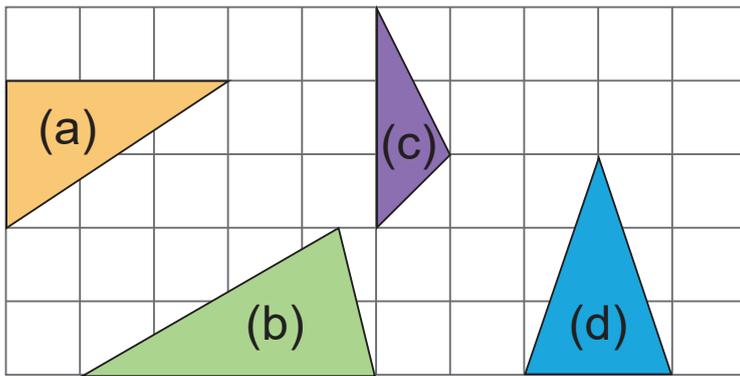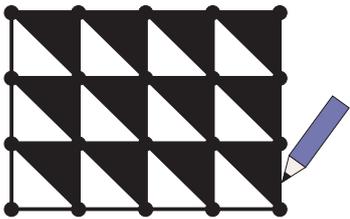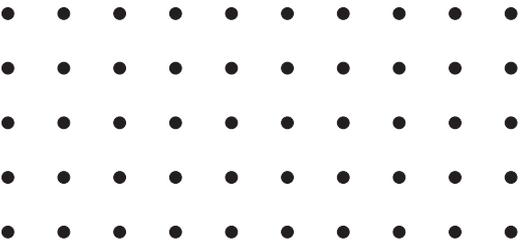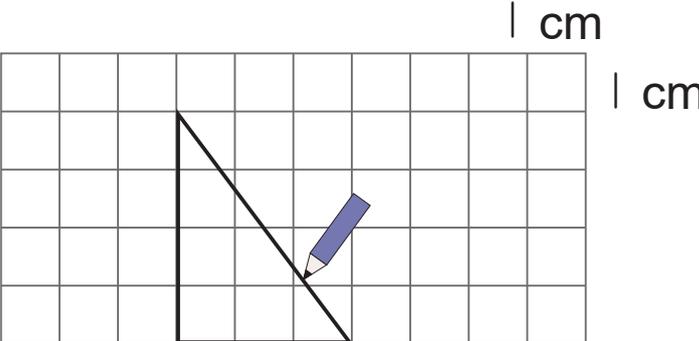**Example 3** Draw a right triangle with 4 cm and 3 cm sides that form a right angle.

1 cm

1 cm

3 Draw right triangles with the following sides that form a right angle.

① with 4 cm and 4 cm sides that form a right angle

② with 2 cm and 5 cm sides

③ with 3 cm and 6 cm sides

1 cm

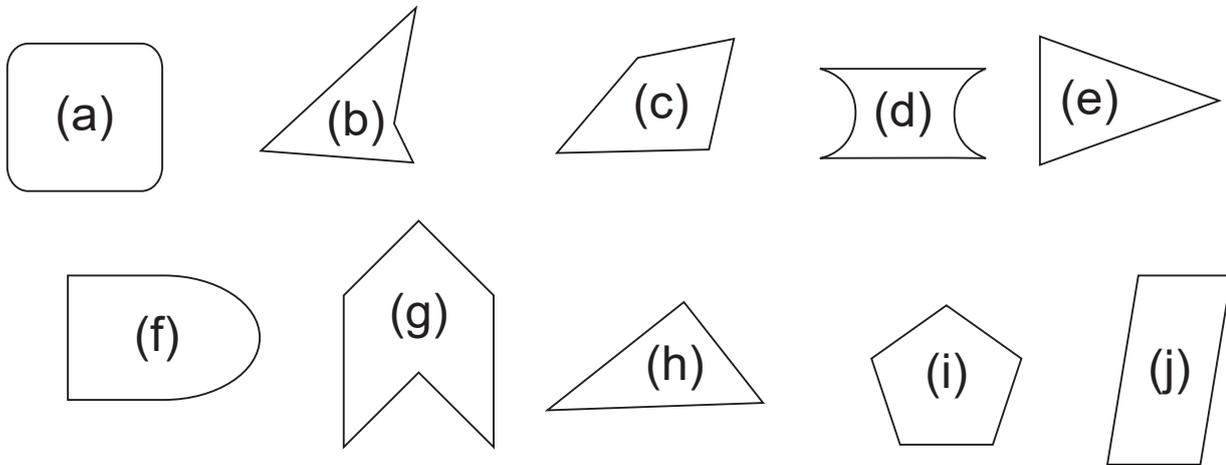1 cm

91

9 - 9

Review

1 How many sides and vertexes do triangles and quadrilaterals have?

Triangles have ☐ sides and ☐ vertexes.
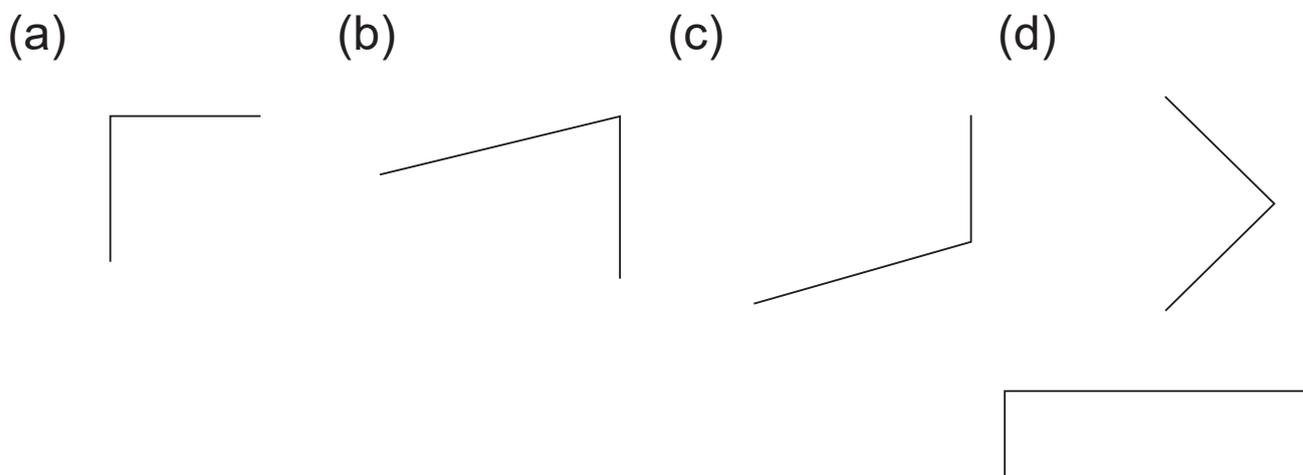
Quadrilaterals have ☐ sides and ☐ vertexes.
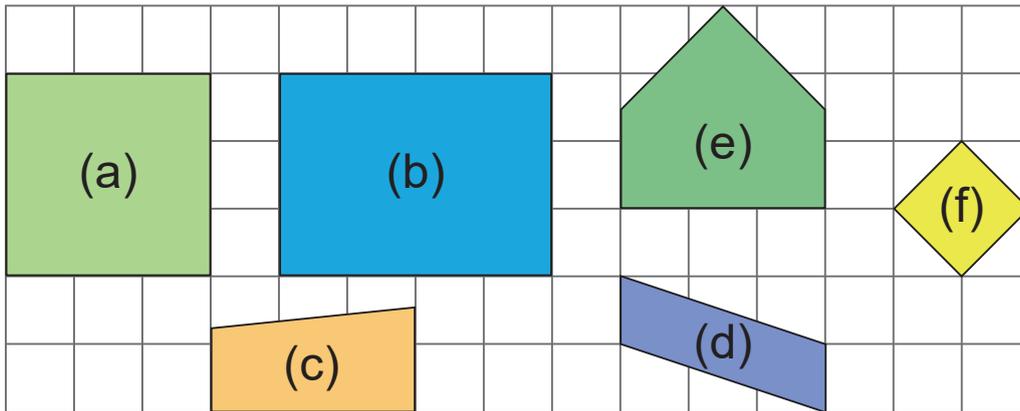
2 Find the triangles and the quadrilaterals.

(a) (b) (c) (d) (e)

(f) (g) (h) (i) (j)

Triangles are ☐

Quadrilaterals are ☐

3 Which of the following is a right angle?

(a)　　　　(b)　　　　(c)　　　　(d)
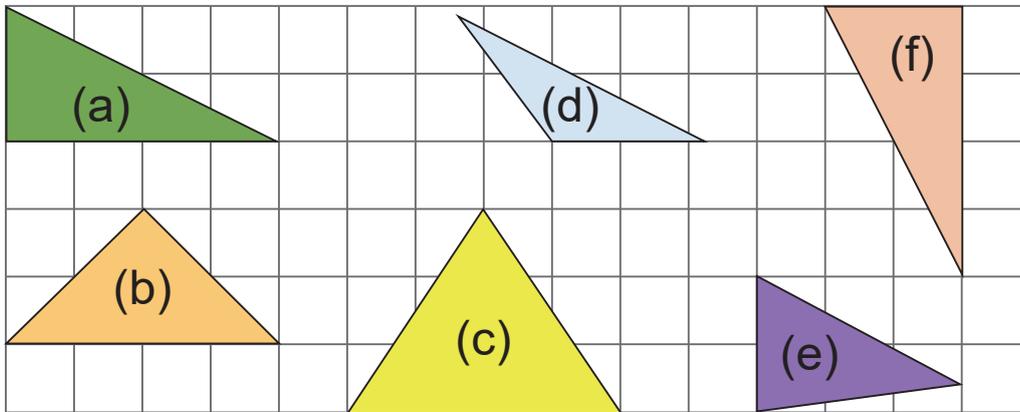
☐

4 Find the square.
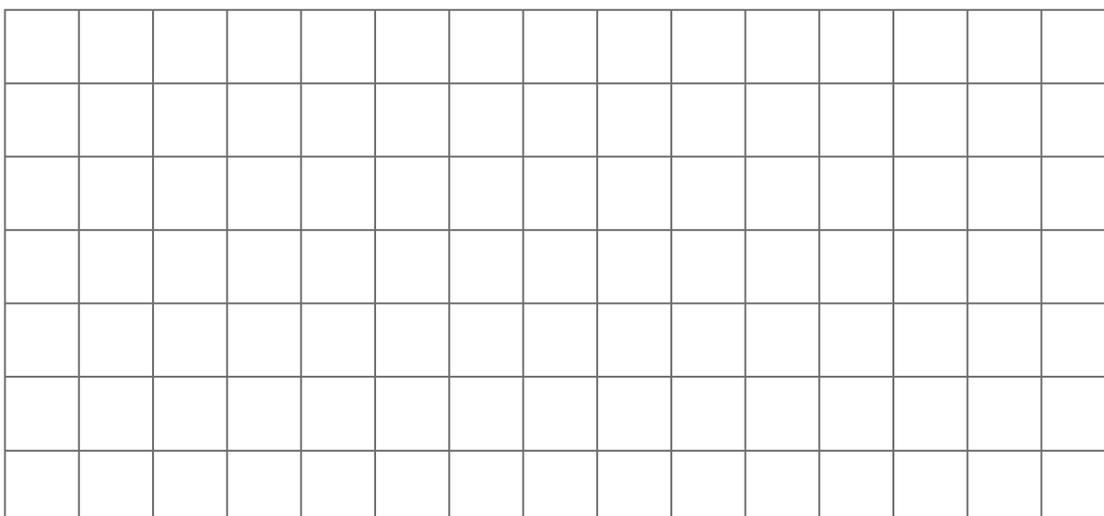

[   ] are square.

5 Find the right triangles.

[   ] are right triangles.

6 Draw the following shapes on the grid below.

1 A rectangle with 2 cm sides and 4 cm sides.

2 A square with 4 cm sides.

3 A right triangle with 2 cm and 6 cm sides that form a right angle.

Ⅰ cm

Ⅰ cm