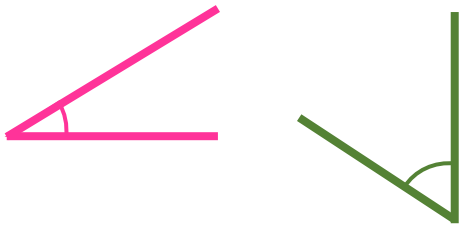
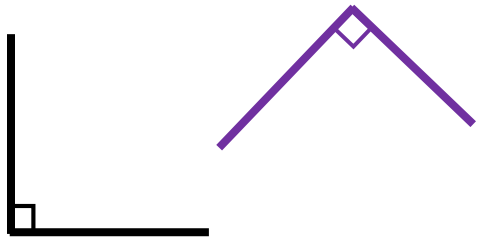
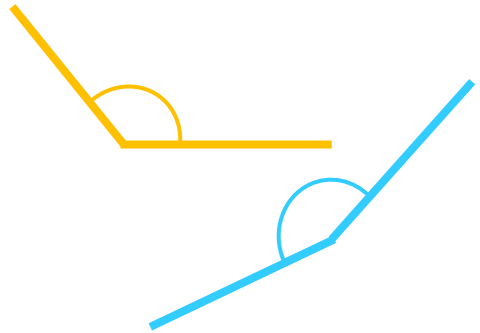
Step 1 Answers

Introduction

Sort the angles.

Smaller than a right angle (acute)	Right angle	Larger than a right angle (obtuse)
		

Varied Fluency 1

Circle all the obtuse angles.

Varied Fluency 2

Use the symbols < or > to make the statements correct.

obtuse angle [>] 90°

Varied Fluency 3

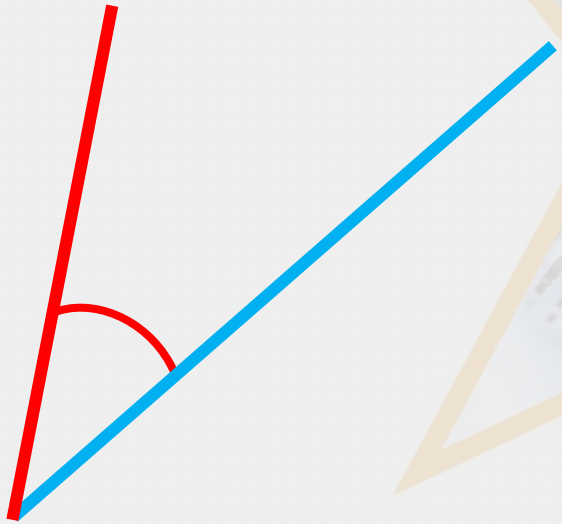
Match the angle size to the correct label.

acute angle

obtuse angle

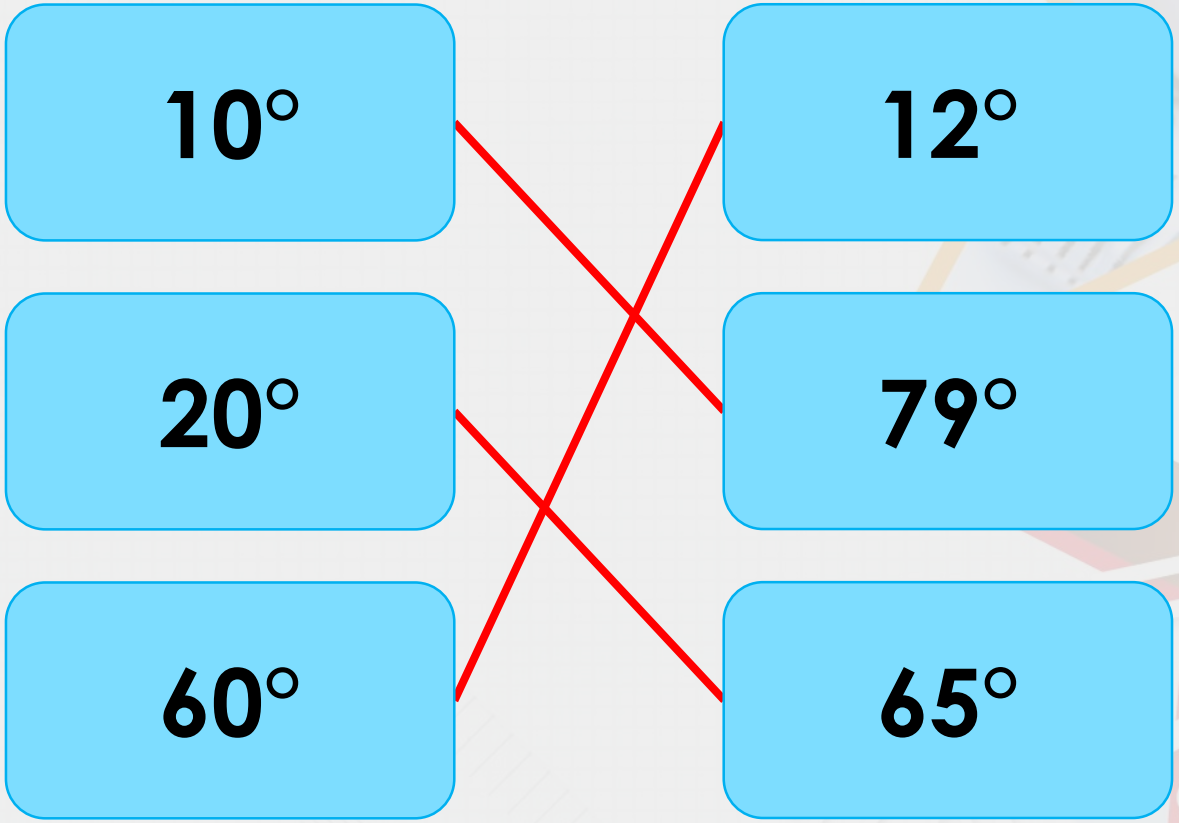
Varied Fluency 4

Use the line to draw an acute angle.



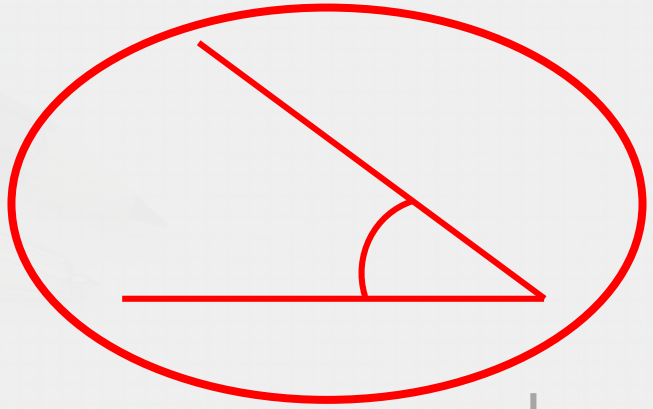
Problem Solving 1

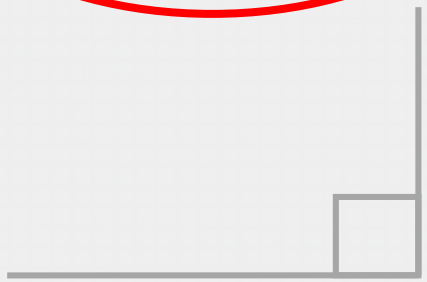
Match the angles which will still be acute when they are combined.



Reasoning 1

Which angle is the odd one out?





Explain your answer.

This angle is acute while all the others are right angles.

Problem Solving 2

Using the digits below, can you create more obtuse or acute angles?

6	1	0	8

2-digit acute possibilities:
61°, 60°, 68°, 16°, 10°, 18°, 86°, 81°, 80°

3-digit obtuse possibilities:
108°, 106°, 160°, 168°

There are more acute than obtuse angles possible.

Step 2 Answers

Introduction

Label these angles as acute, right angle or obtuse.

Obtuse

Acute

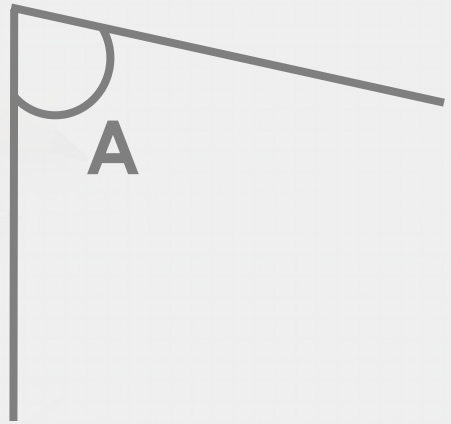
Acute

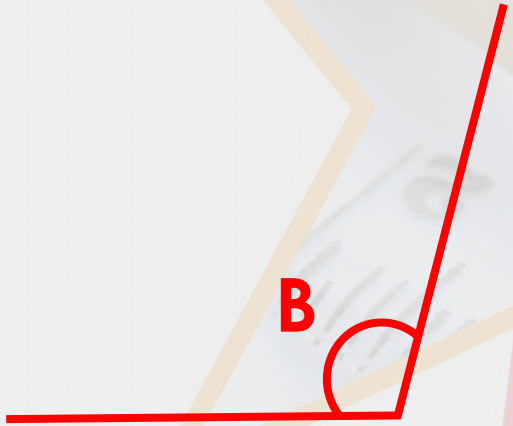
Right Angle

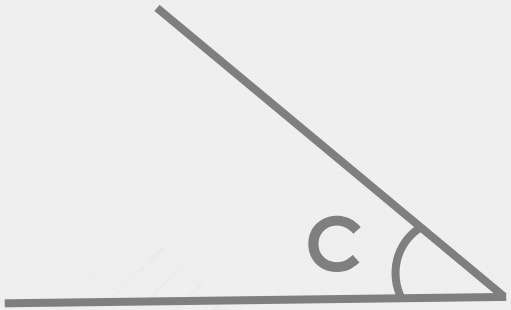
Obtuse

Varied Fluency 1

Which angle is the largest?

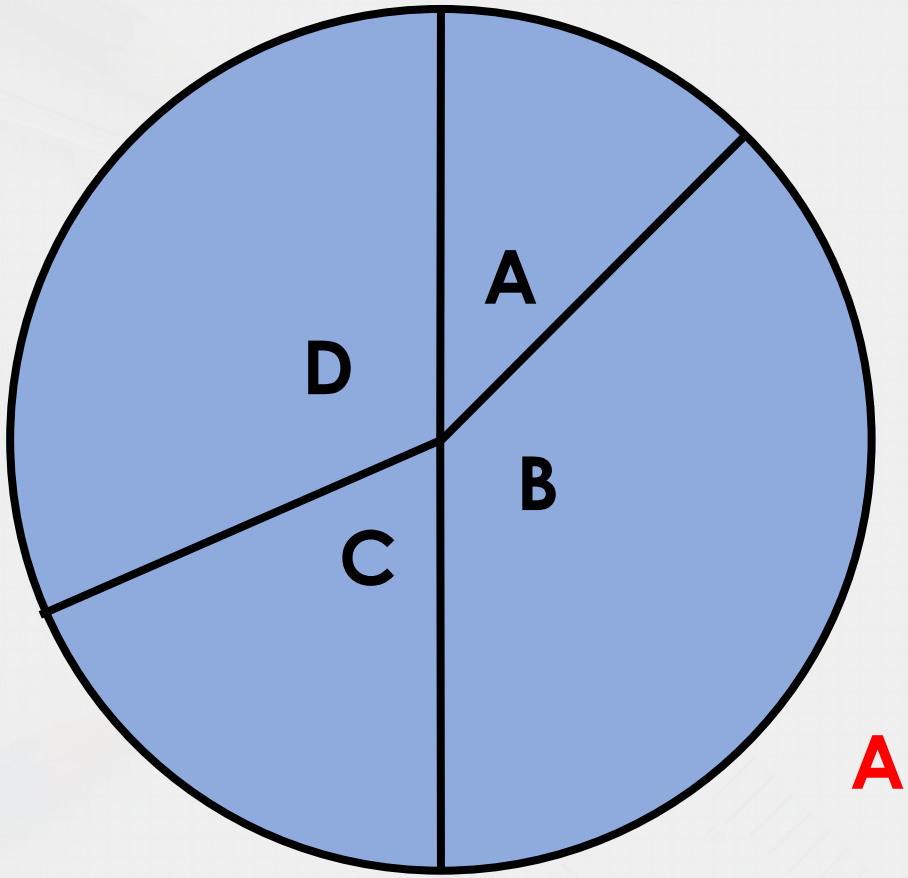






Varied Fluency 2

Here are some segments with different sized angles at their points.
Put the angles in order from smallest to largest.

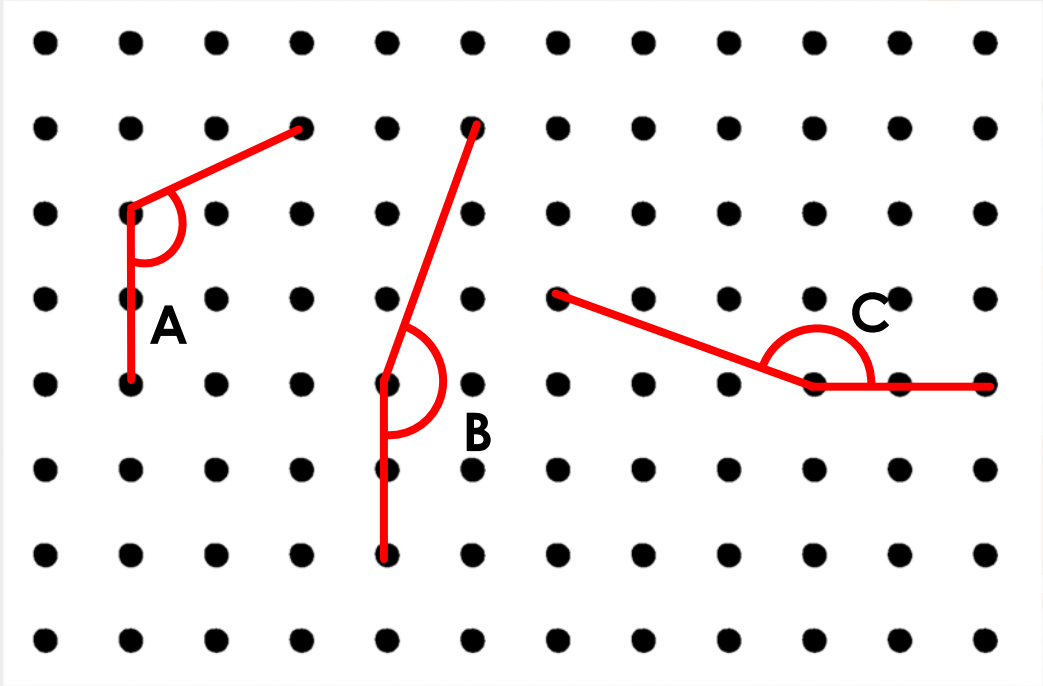


A, C, D, B

Varied Fluency 3

True or false?

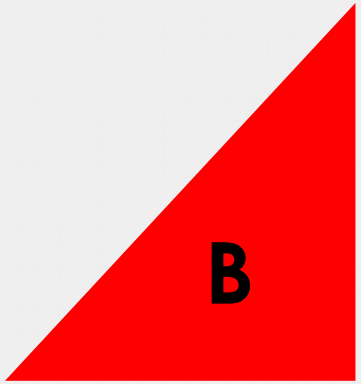
Angle A is smaller than angle B. Angles B and C are the same size.



True

Problem Solving 1

Which of these shapes contains the smallest angle?



Reasoning 1

Kaito is discussing angles.

I have 3 angles. One angle is obtuse, one is 90° and the other is acute. I think that the 90° angle is the smallest angle.

Is Kaito correct? Explain your answer.

Kaito is incorrect because...

Reasoning 1

Kaito is discussing angles.

I have 3 angles. One angle is obtuse, one is 90° and the other is acute. I think that the 90° angle is the smallest angle.

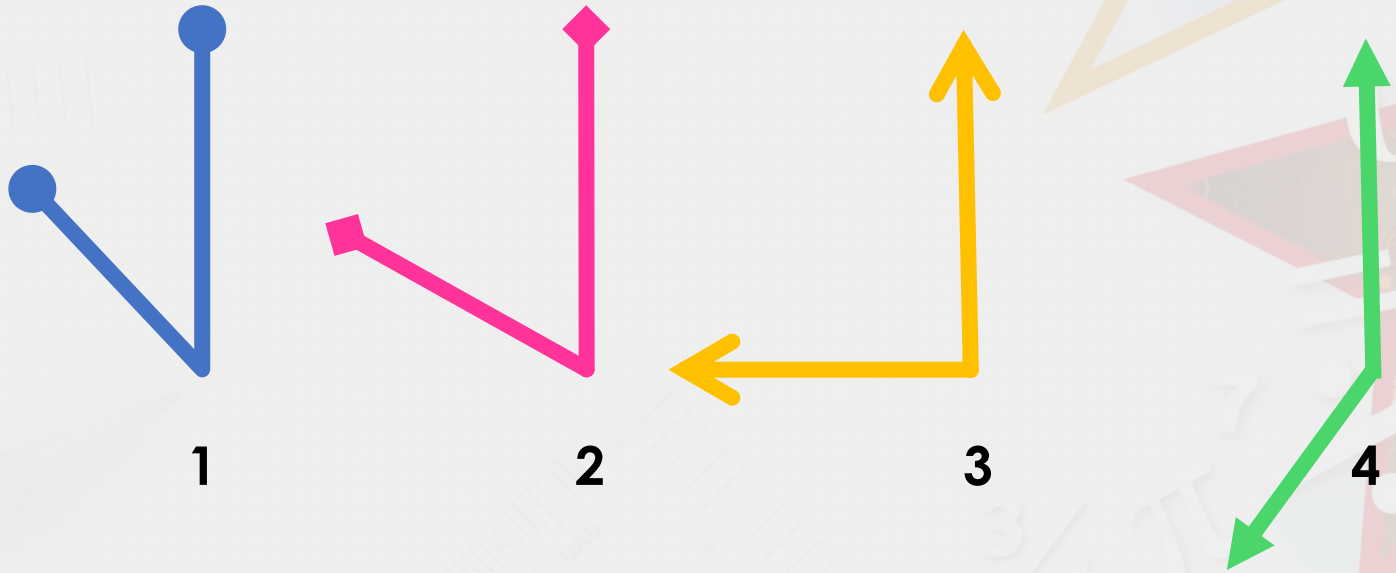
Is Kaito correct? Explain your answer.

Kaito is incorrect because an acute angle is smaller than 90°.

Problem Solving 2

If you join together the end points of the matching lines below, do they make 4 angles in order from smallest to largest?
Be sure to compare the smallest side of each angle created.

Yes



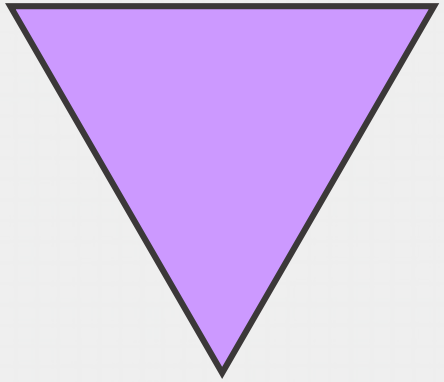
Step 3 Answers

Introduction

What is the same and what is different about these triangles?

Answers might include: different colours, different sizes, different shapes, all have 3 sides etc.

Isosceles
Has 2 sides of equal length.



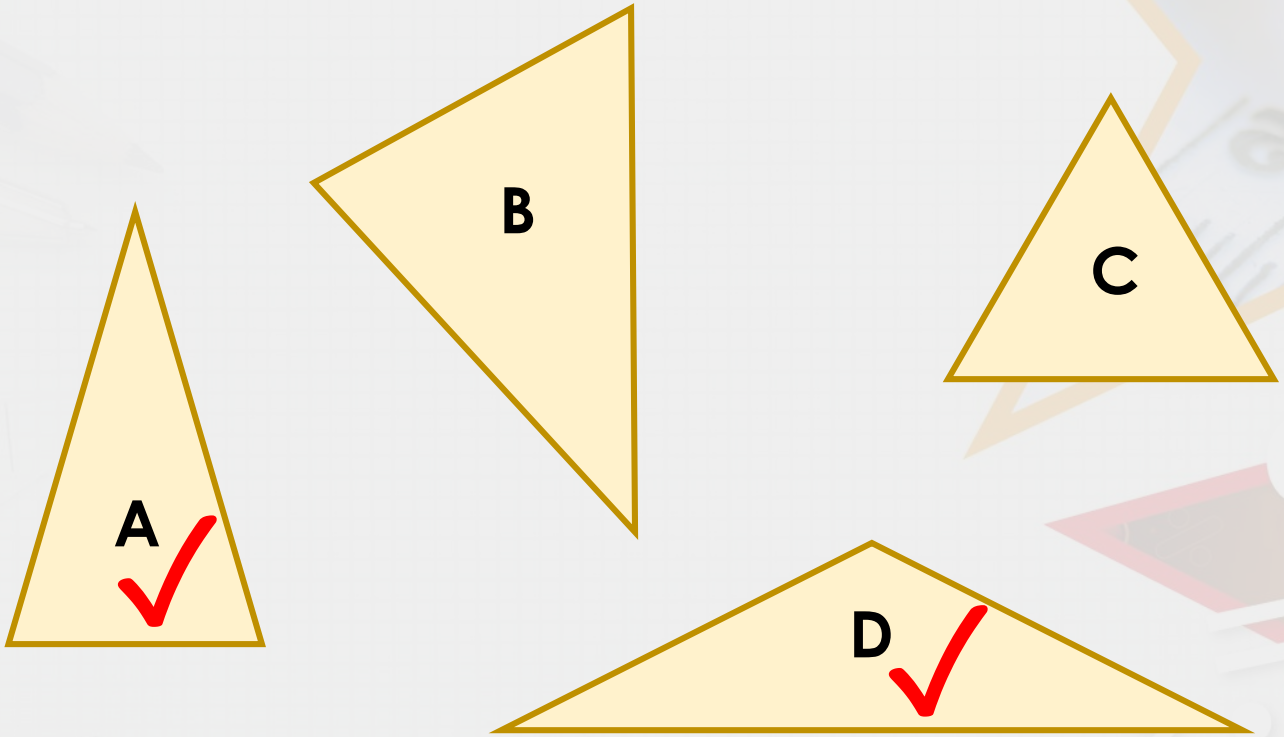
Equilateral
Has 3 sides of equal length.

Scalene
Has 0 sides of equal length.

What is the name of each triangle?
What do you know about it?

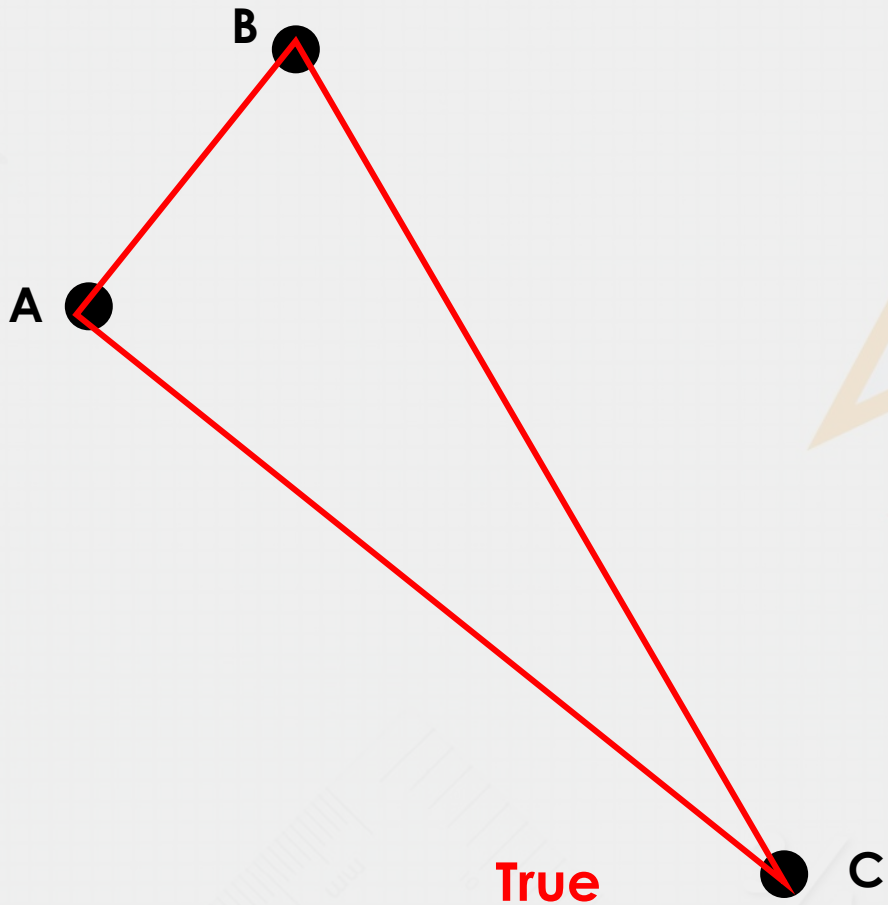
Varied Fluency 1

Tick the isosceles triangles.



Varied Fluency 2

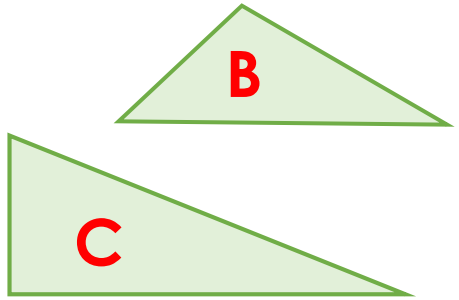
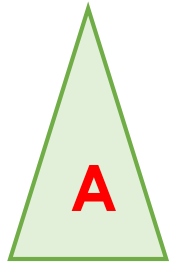
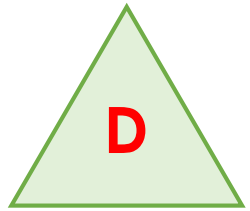
True or false? Connecting these dots will create a right angled triangle.



True

Varied Fluency 3

Sort the triangles into the table.

Scalene	Isosceles	Equilateral
		

Varied Fluency 4

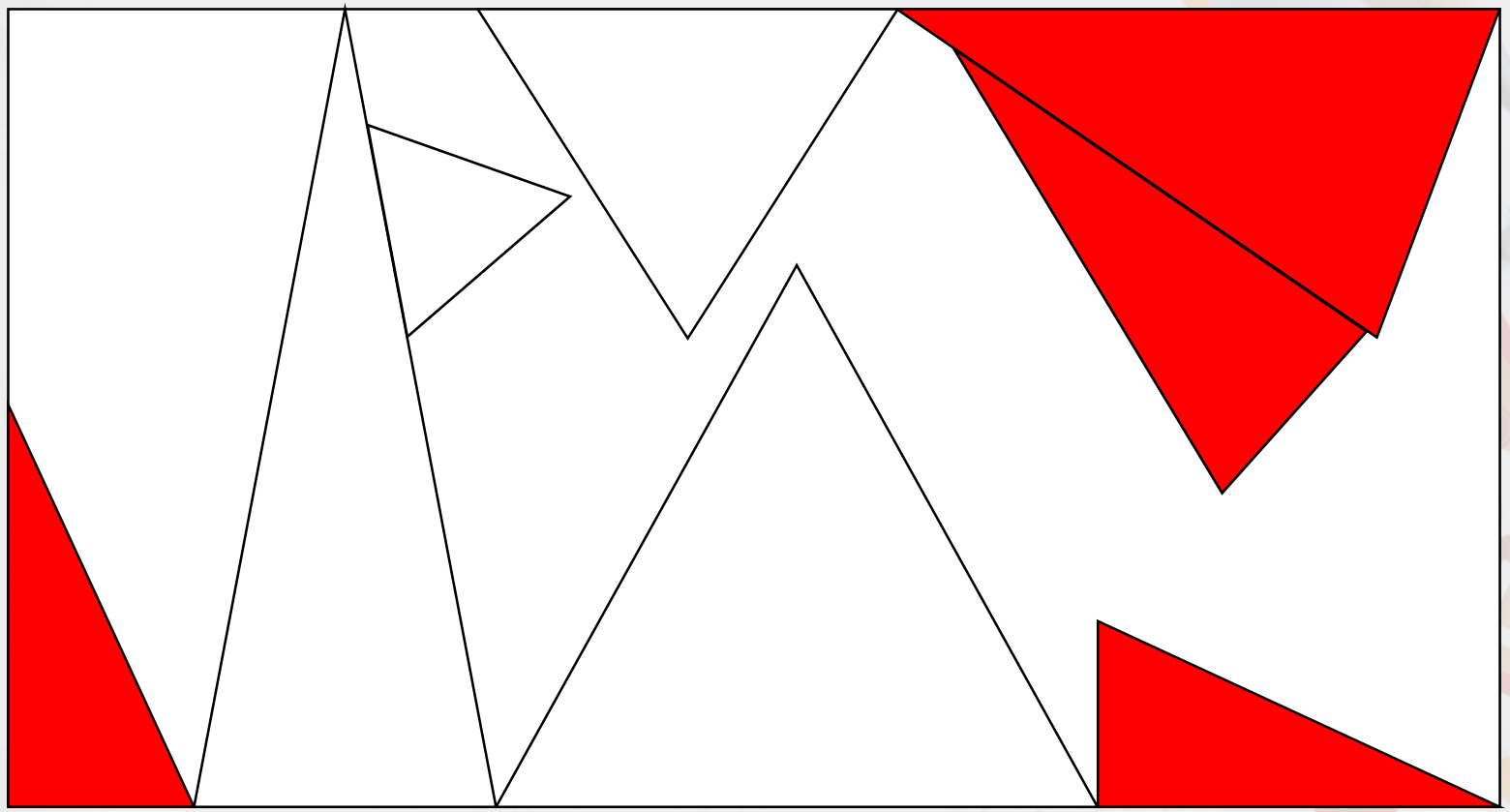
Use a ruler to draw a scalene triangle with the shortest side measuring 5 cm.

Check your partner's triangle. It MUST be a scalene triangle and have one side that measures 5cm.

This triangle has a base that measures 5cm (but it may appear bigger on the whiteboard).

Problem Solving 1

Colour the triangles in this image which are scalene. Use a ruler to help.



Reasoning 1

Holly is designing a logo for a car park.

She says,

The logo includes no scalene triangles.

Is she correct? Explain your answer.
Yes because…

Reasoning 1

Holly is designing a logo for a car park.

She says,

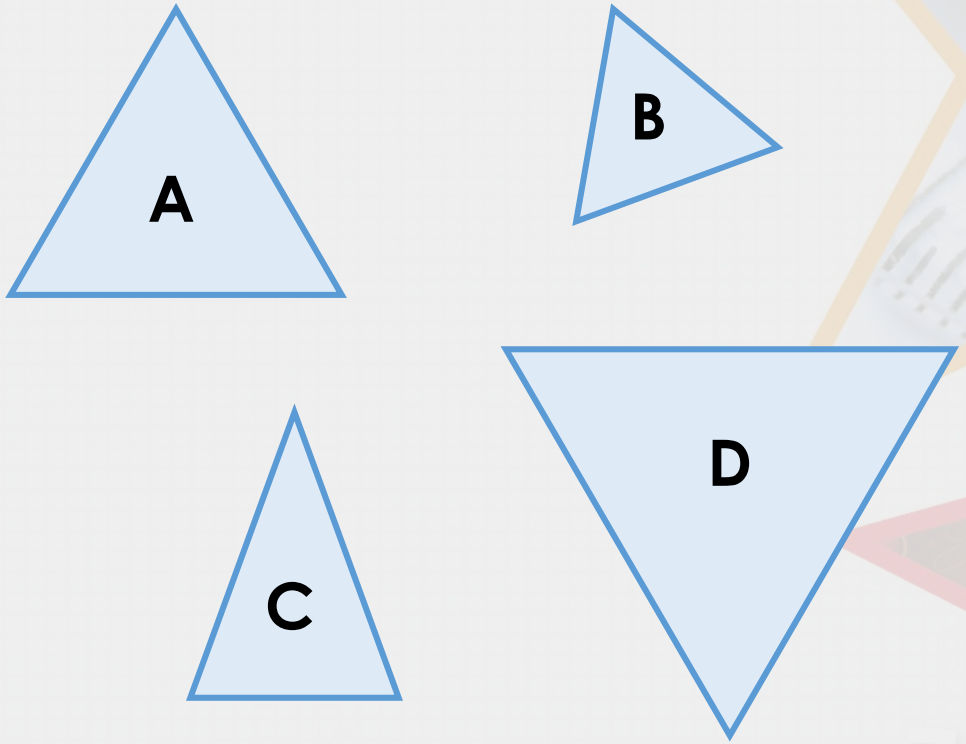
The logo includes no scalene triangles.

Is she correct? Explain your answer.

Yes because the left and right triangles are isosceles because they have 2 equal sides and the middle triangle is equilateral because it has 3 equal sides.

Reasoning 2

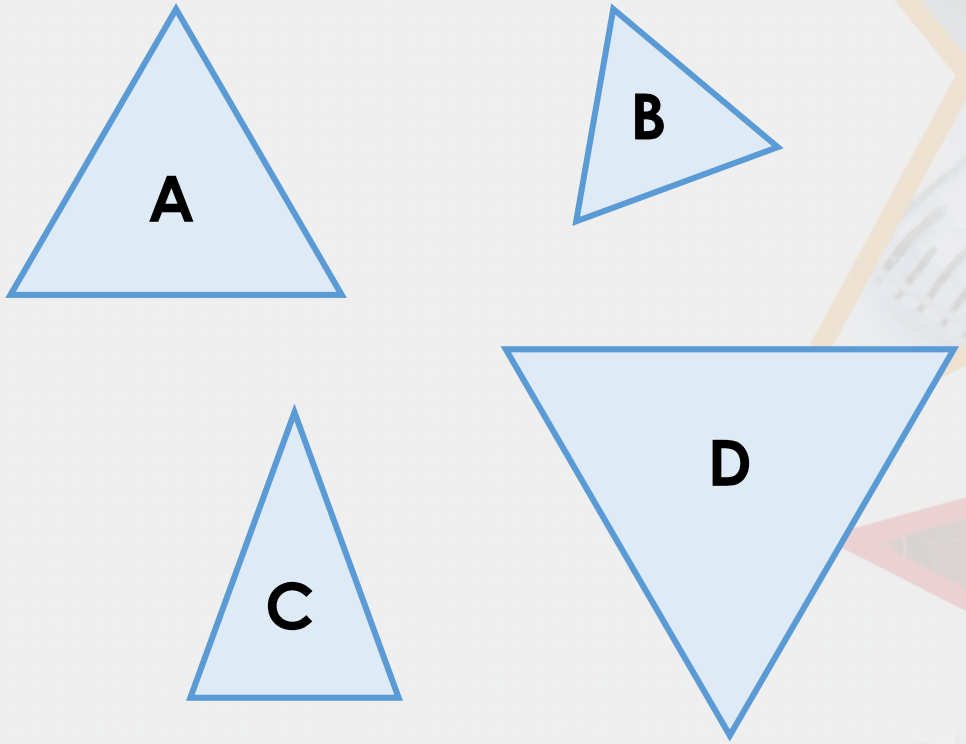
Which triangle is the odd one out?
Why?



C because…

Reasoning 2

Which triangle is the odd one out?
Why?



C because it is the only isosceles triangle.
The rest are equilateral.

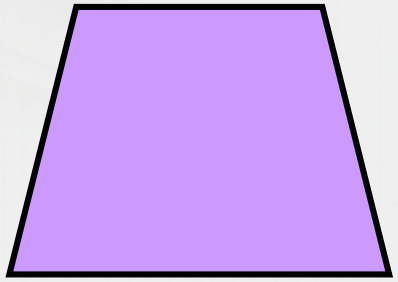
Step 4 Answers

Introduction

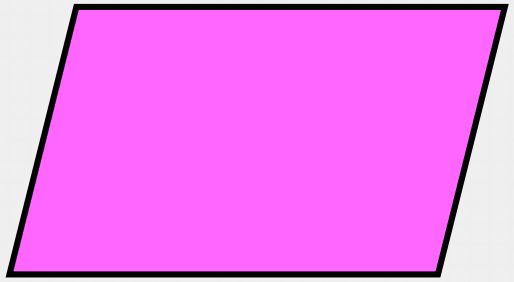
Which is the odd one out? Explain your choice.

Example answer:

The pentagon is the odd one out as all of the others are quadrilaterals.

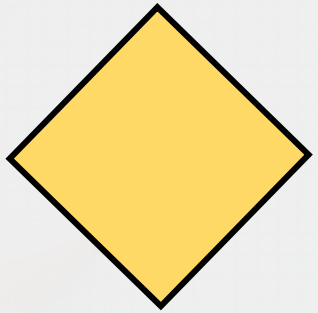


trapezium

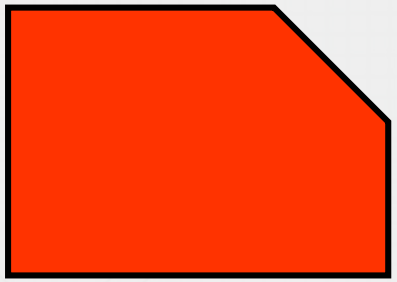


parallelogram

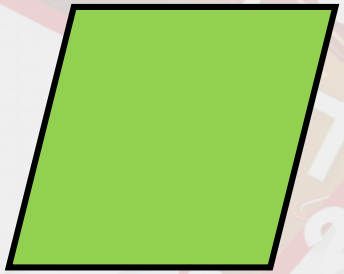
rectangle



square



pentagon



rhombus

Name each shape.

Varied Fluency 1

Draw lines to match the true statements to the shape.

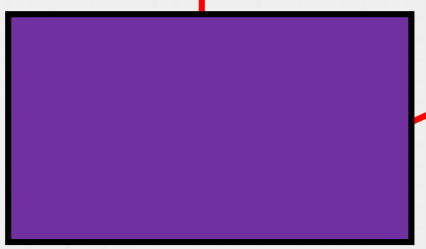
It is a rectangle

It has 5 right angles

It has 3 sides

It has equal sides

It has 4 sides



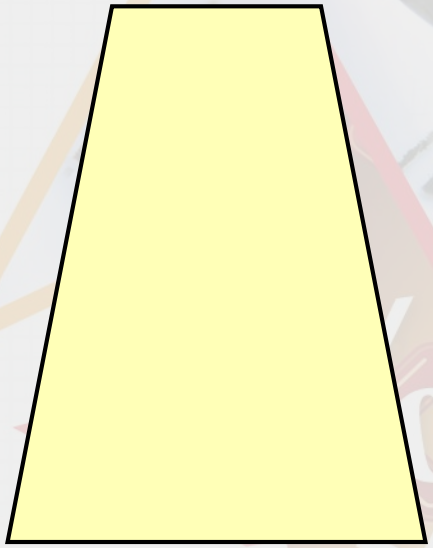
Varied Fluency 2

Fill in the blanks to describe the shape.

This shape has __4__ sides.

It has __0__ right angles.

It has __1__ pair of parallel sides.



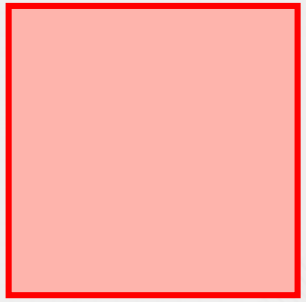
Varied Fluency 3

Draw the shape using the description below.

The shape has:

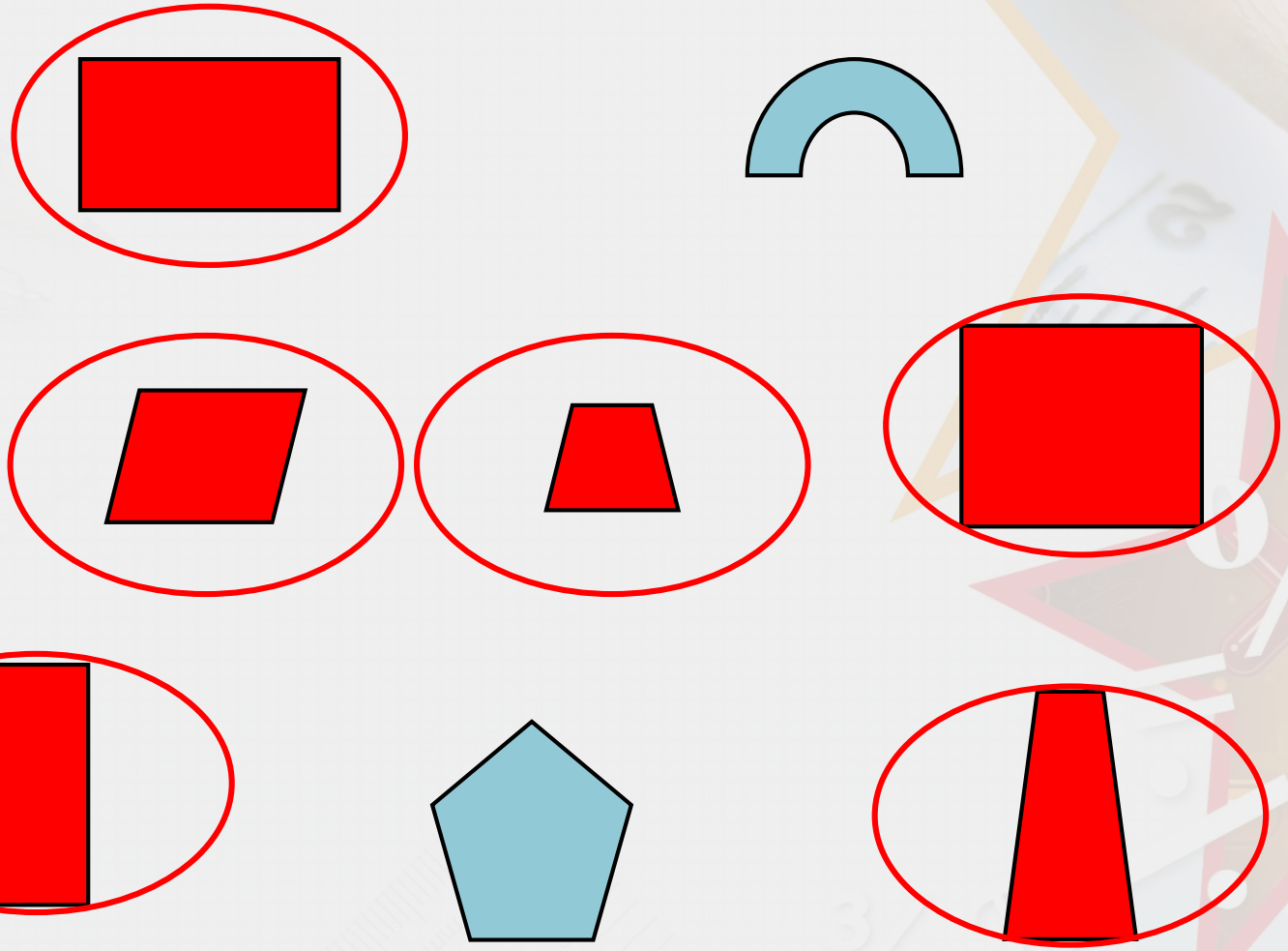
- **4 sides**
- **4 right angles**

What shape have you drawn?



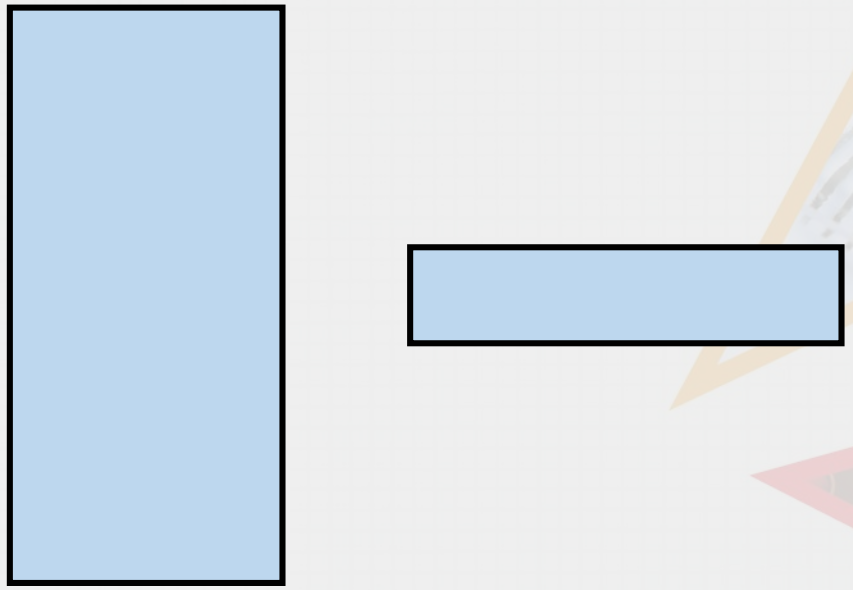
Varied Fluency 4

Circle the quadrilaterals.



Reasoning 1

What is the same about these two shapes?
What is different?



Various answers, for example:
Same: 4 sides; 4 right angles; 2 pairs of parallel sides
Different: size; orientation

Problem Solving 1

Tina is thinking of a shape. It has:

- **4 equal length sides**
- **No right angles**

What shape could Tina be thinking of? Give all possible answers.

Tina could be thinking of a rhombus.

Reasoning 2

Jenny thinks that the shape matches her statement.

This quadrilateral has 1 pair of parallel lines and 0 right angles.

Is she correct? Explain your answer.
Jenny is incorrect because…

Reasoning 2

Jenny thinks that the shape matches her statement.

This quadrilateral has 1 pair of parallel lines and 0 right angles.

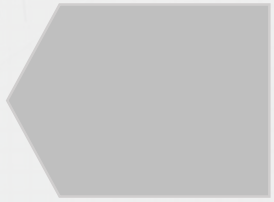
Is she correct? Explain your answer.

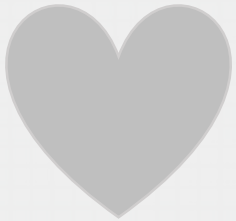
Jenny is incorrect because this quadrilateral is a parallelogram so it has 2 pairs of parallel lines and no right angles.

Step 5 Answers

Introduction

Which of the following shapes have more than one line of symmetry?

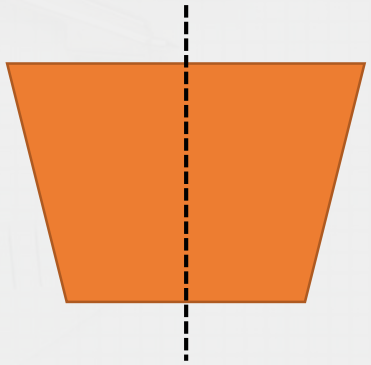




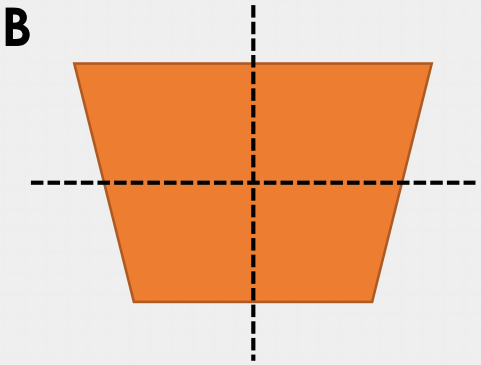
Varied Fluency 1

Which shape has the correct lines of symmetry marked?

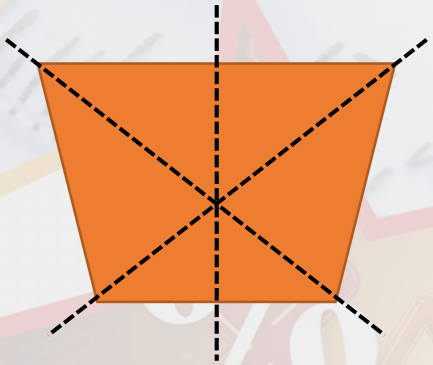
A



B



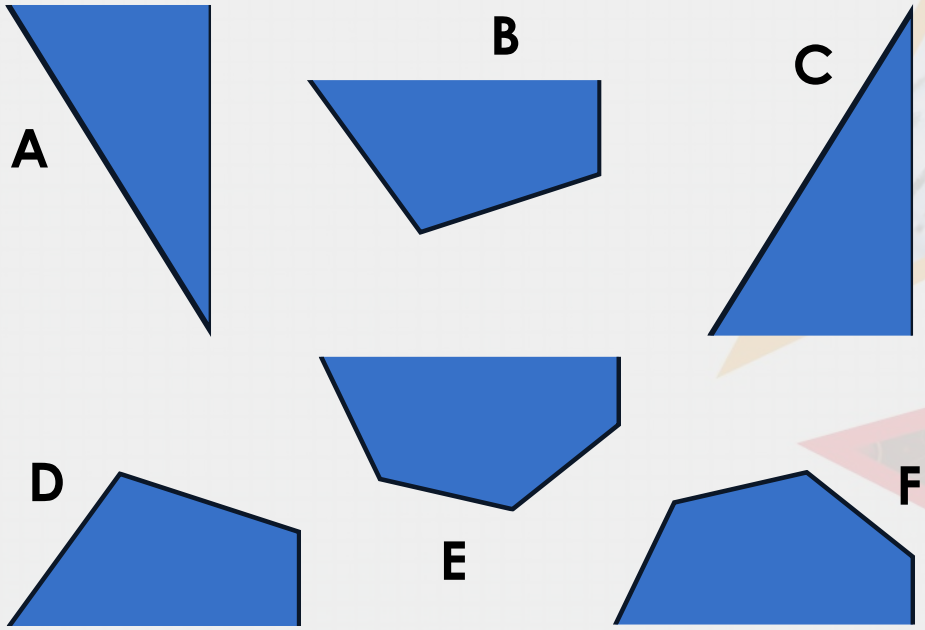
C



Shape A

Varied Fluency 2

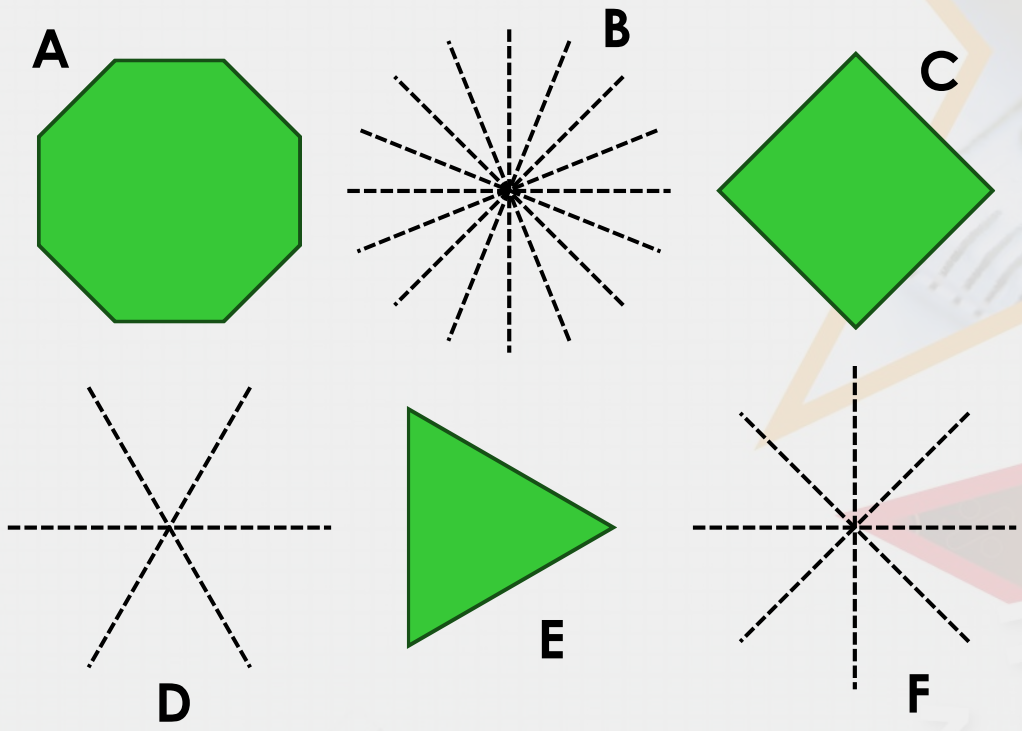
Match the halves which go together to make symmetrical shapes.



A and C; B and D; E and F

Varied Fluency 3

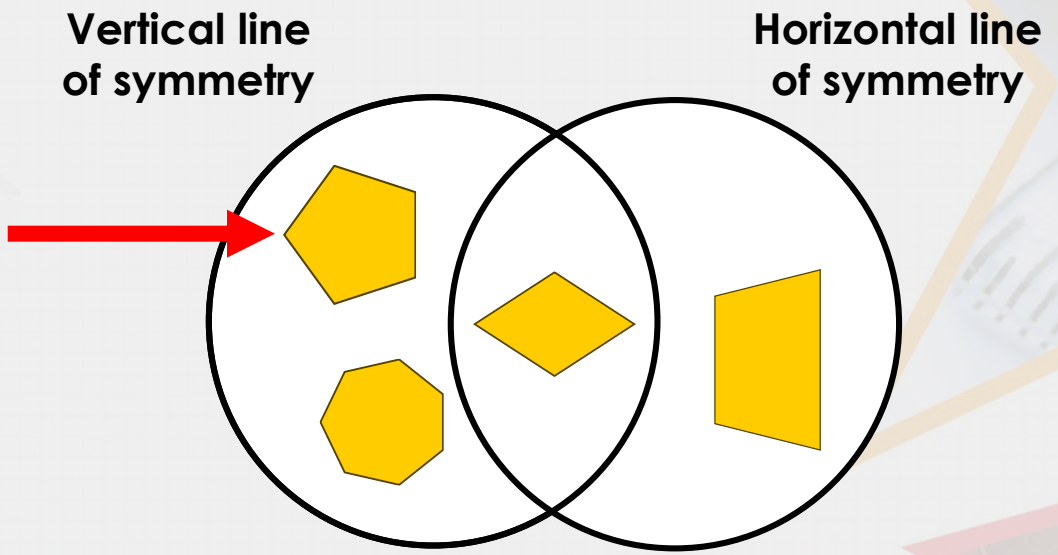
Pair the lines of symmetry with the shapes they match.



A and B; C and F; D and E

Reasoning 1

Eustace has filled in this Venn diagram with shapes.

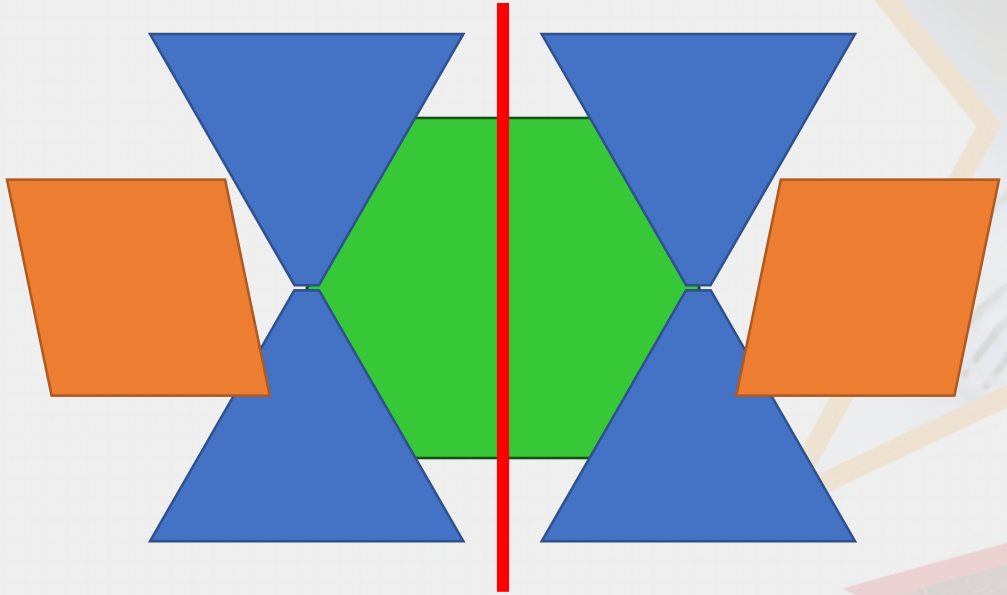


Find and explain his mistake.

Eustace has put the pentagon in the 'Vertical line of symmetry' section when in that orientation. It should be in the 'Horizontal line of symmetry' section instead.

Problem Solving 1

Here is an image made up of several shapes.

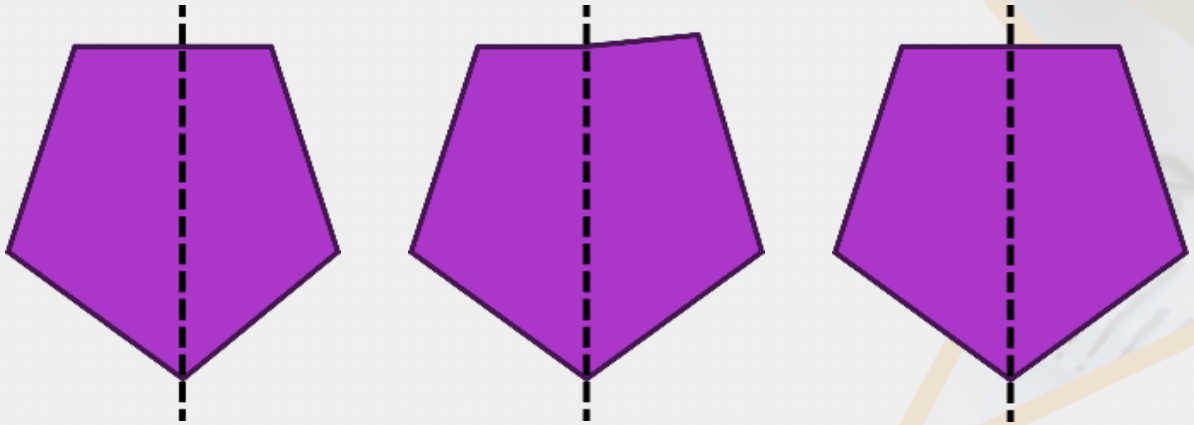


How many lines of symmetry does the image (not the individual shapes) have?

The image has 1 line of symmetry.

Reasoning 2

Here are 3 attempts at drawing reflections.



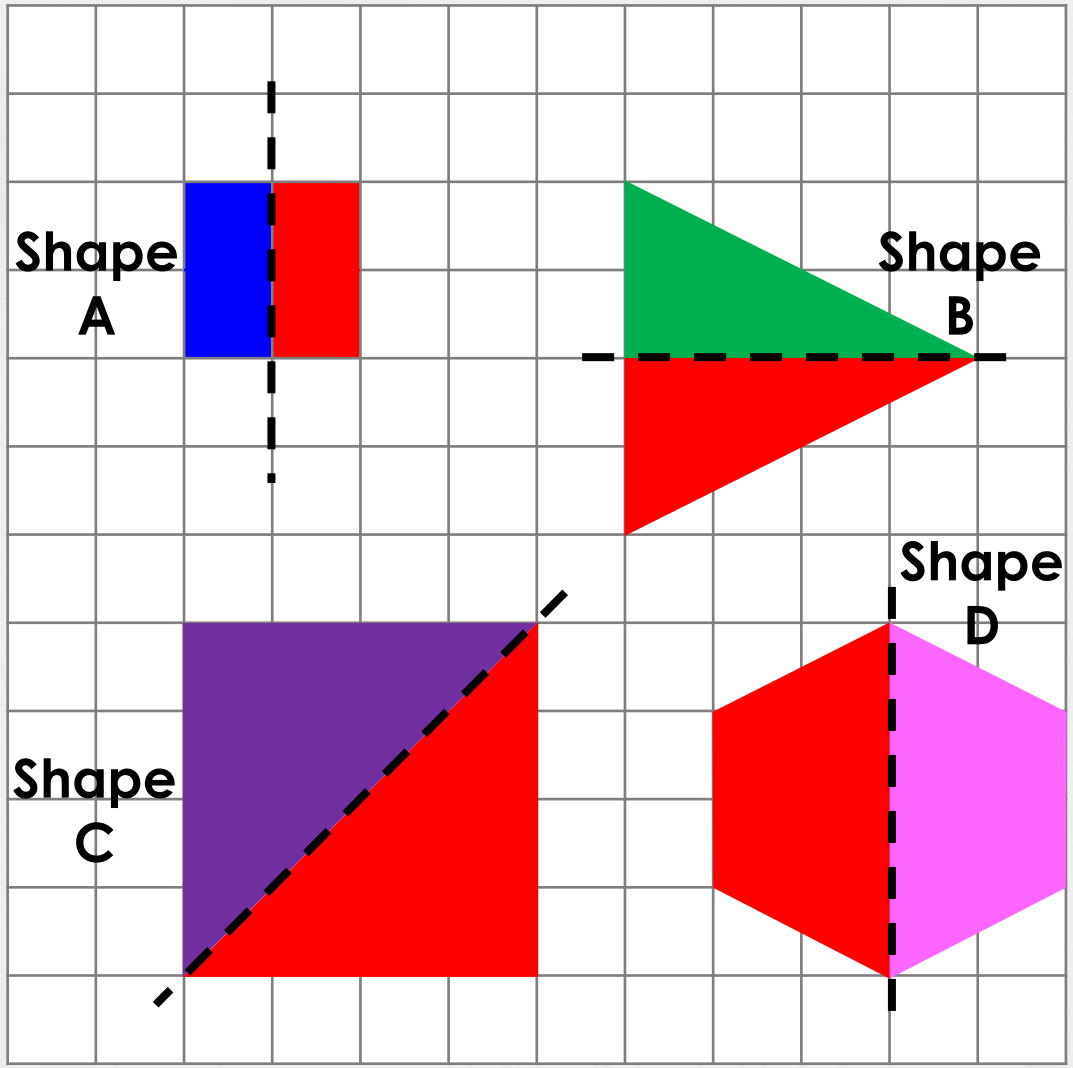
A B C

Find the reflections that are not symmetrical. Explain why.

Shapes A and B are not symmetrical. The right-hand part of shape A is narrower than the left-hand side. The top-right-hand corner of reflection B is higher and further out than the top-left-hand corner.

Step 6 Answers

Introduction

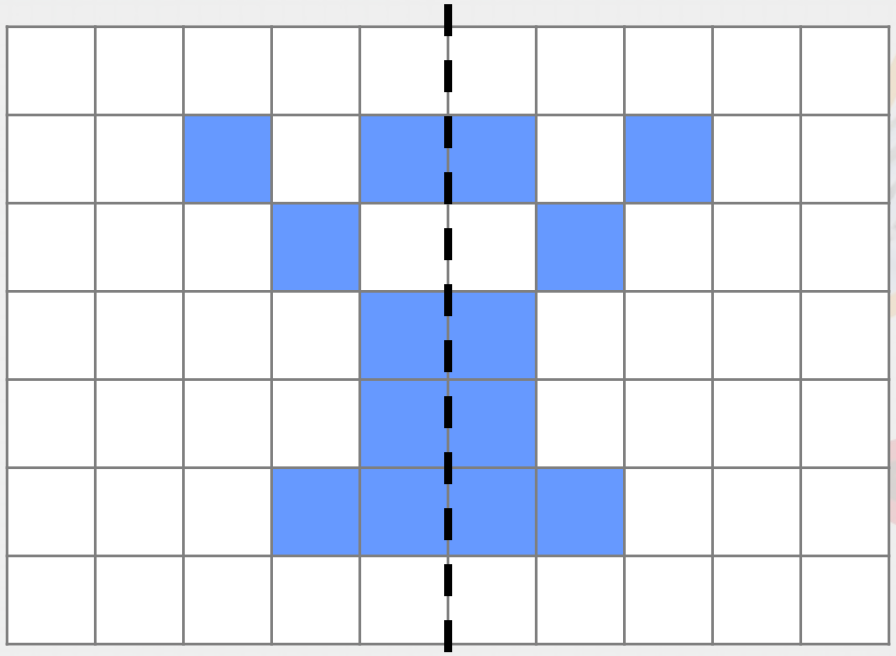


Reflect each shape in the mirror line and identify the name of the completed shape.

Shape A = square
Shape B = triangle
Shape C = square
Shape D = hexagon

Varied Fluency 1

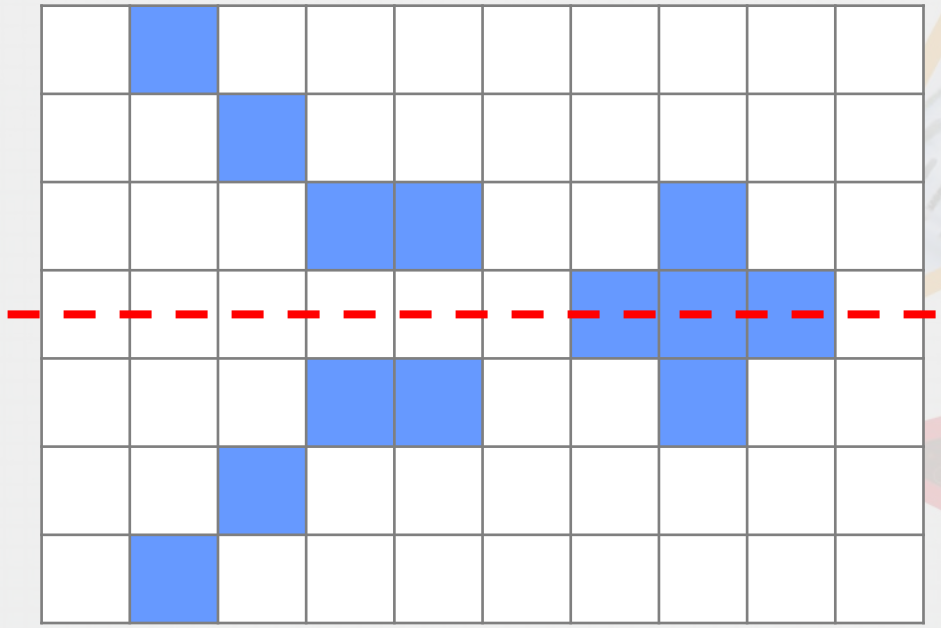
True or false?
This pattern has been reflected correctly in the mirror line.



True

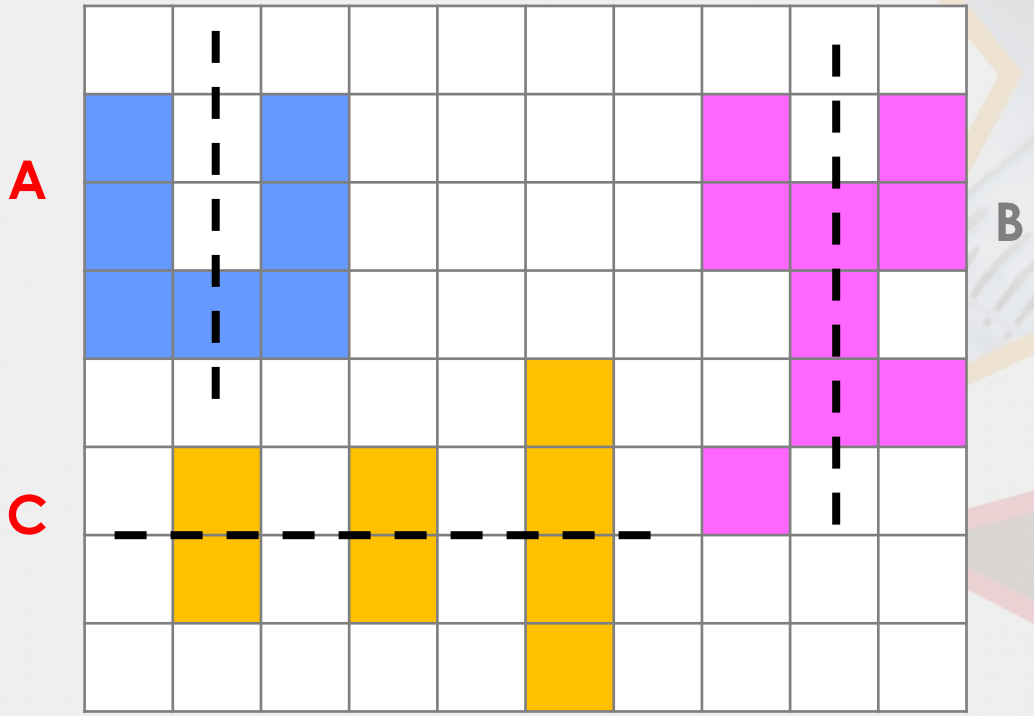
Varied Fluency 2

Draw the line of symmetry.



Varied Fluency 3

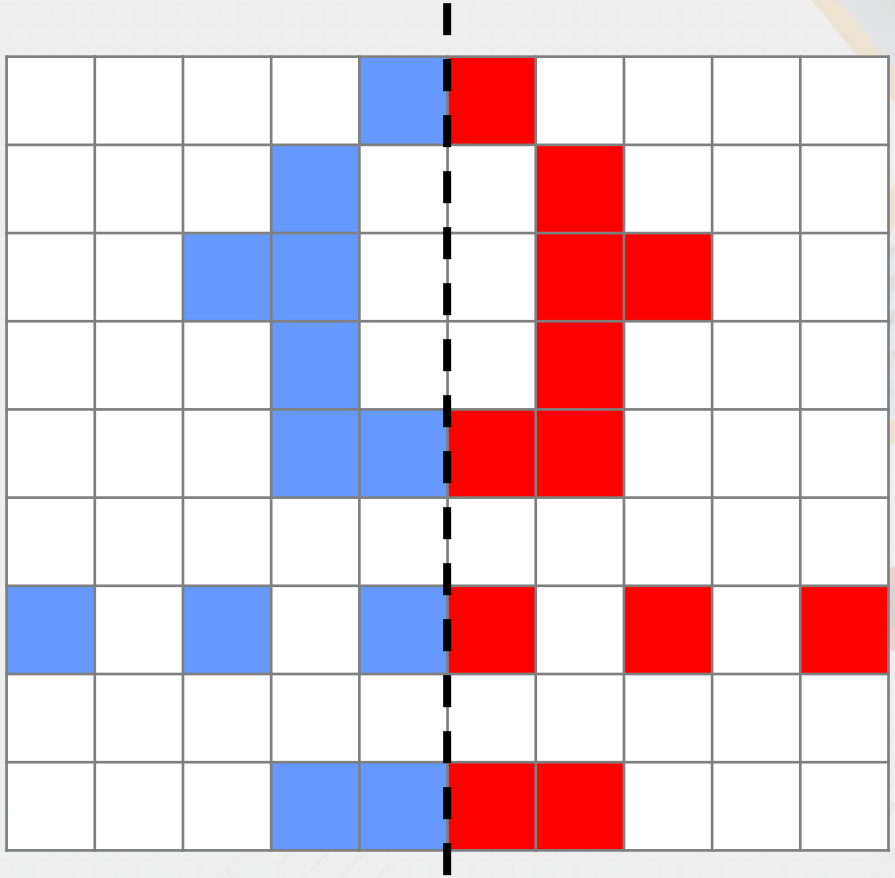
Identify the patterns with the correct lines of symmetry.



A and C

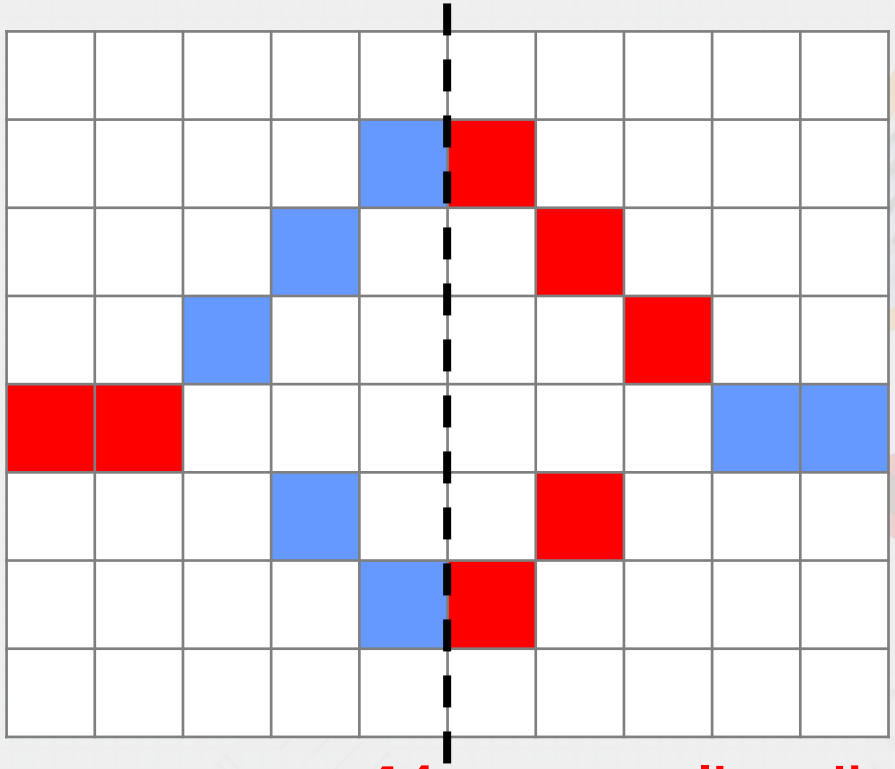
Varied Fluency 4

Reflect the pattern in the mirror line.



Problem Solving 1

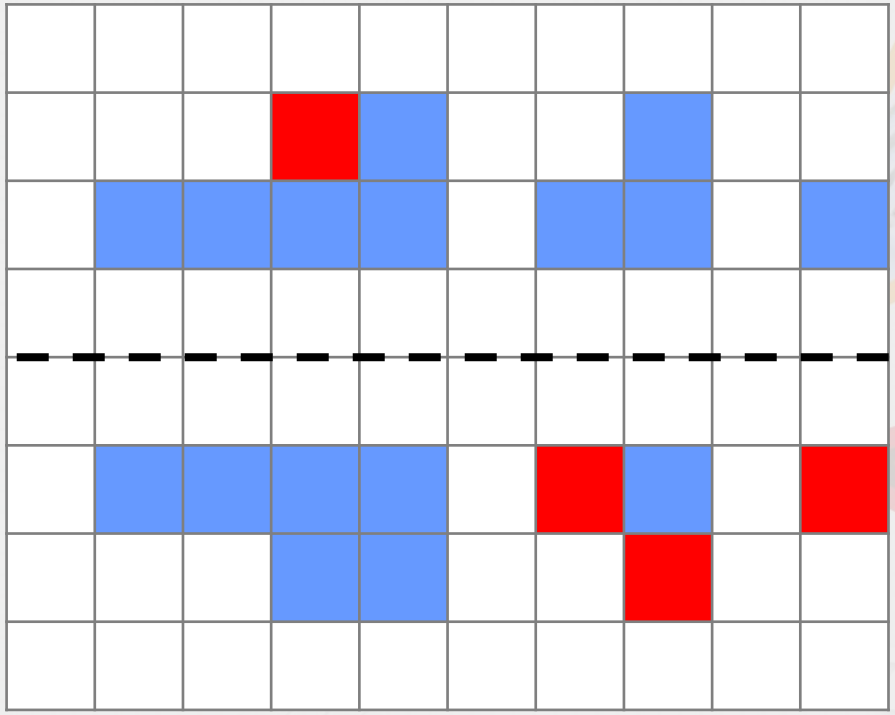
What is the smallest number of squares that need to be filled so that this pattern has a vertical line of symmetry?



7 more squares, 14 squares altogether.

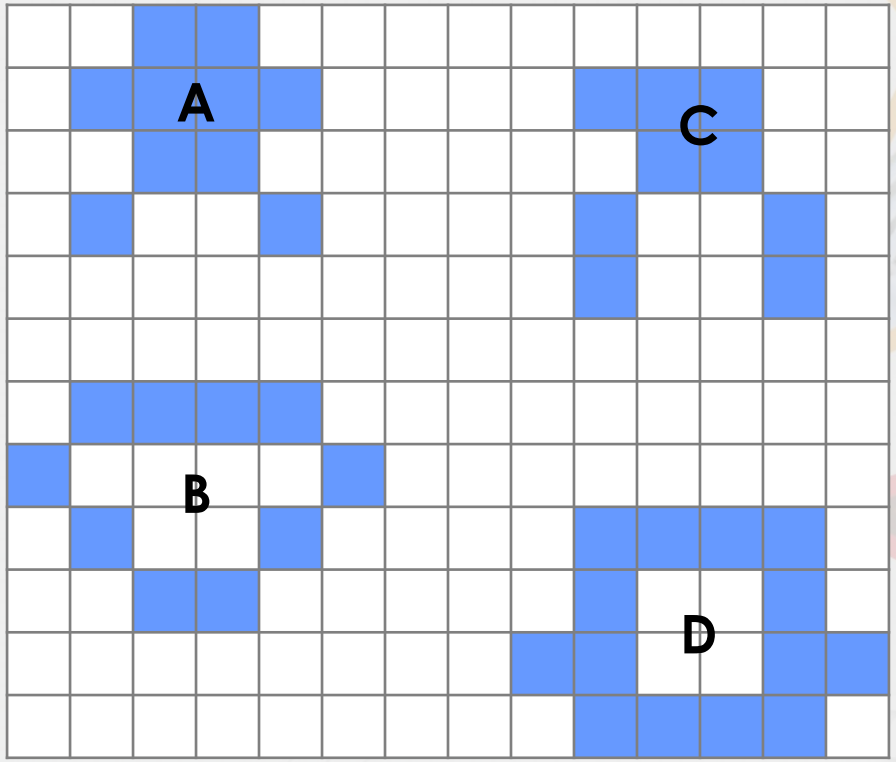
Problem Solving 2

Add 4 squares to the pattern below so that it has a horizontal line of symmetry.



Reasoning 1

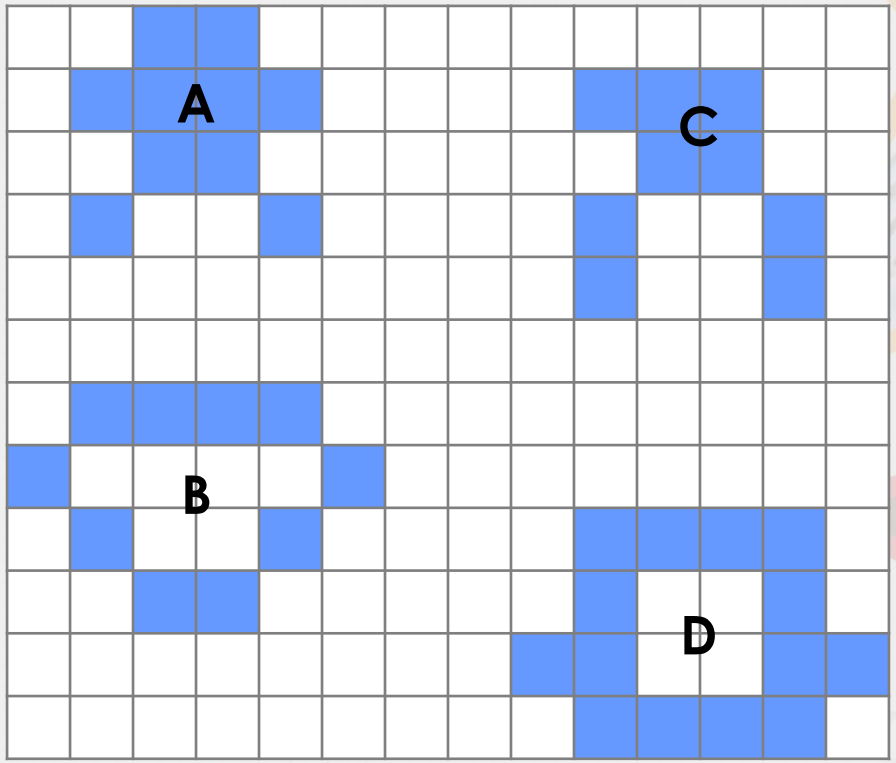
Spot the odd one out. Explain your choice.



C is the odd one out because…

Reasoning 1

Spot the odd one out. Explain your choice.



C is the odd one out because it's the only pattern that is not symmetrical. All the other patterns have a line of symmetry.