Name & Surname: _____ Class: _____ Date: _____

Mirror Match

Fold shapes into matching halves

About 45 minutes Level ★★★☆☆



What Is Line Symmetry?

A **line of symmetry** is a fold that makes two **matching parts**.

- Fold along the line and both halves **match exactly** with no gaps.
- Put a **mirror** on the line and you would see the whole shape.
- A figure can have 0, 1, 2, or more **lines of symmetry**. A square has 4.

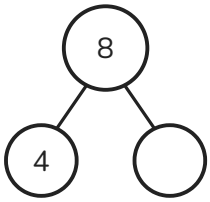


Task A

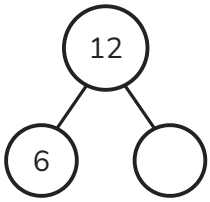
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Find the missing matching part. Both parts must be equal.

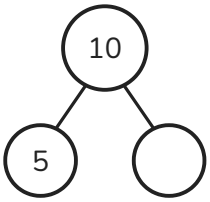
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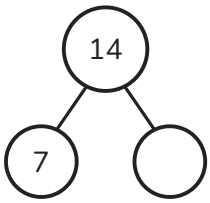
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4



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Count the Lines

Practice finding symmetric figures and counting lines.

Key words

line of symmetry: a fold that makes two matching halves

mirror image: a flip copy that looks just the same

horizontal: straight side to side

matching parts: two halves that fit exactly on each other

vertical: straight up and down

Task B

/10

Count **lines of symmetry** and spot **matching parts**.

WARM UP

1. A paper heart folds in half into two **matching parts**. Does it have a **line of symmetry**?

Answer: _____

2. A wobbly blob has no fold that makes **matching parts**. How many **lines of symmetry** does it have?

Answer: _____

3. A square can fold vertical, horizontal, and two **diagonal ways**. How many **lines of symmetry** is that?

Answer: _____

4. A non-square rectangle folds vertical and horizontal into **matching parts**. How many **lines of symmetry** is that?

Answer: _____

PRACTICE

5. One equilateral triangle has 3 **lines of symmetry**. How many **lines of symmetry** do 2 triangles have in all?

Answer: _____

6. A square has 4 **lines of symmetry**. A rectangle has 2. How many more does the **square** have?

Answer: _____

7. A student counts: square 4, rectangle 2, isosceles triangle 1. What is the **total number** of lines?

Answer: _____

PROBLEM SOLVING

8. The class cuts 20 paper butterflies. Each butterfly needs 1 **fold line** to check symmetry. How many **fold lines** in all?

Answer: _____

9. A builder lays 12 square tiles in a row. Each square has 4 **lines of symmetry**. How many **lines of symmetry** are there in all 12 tiles?

Answer: _____

10. Explain how you know a fold is a **line of symmetry**.

Answer: _____

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Spot the Mistake

Find where the working goes wrong with symmetry.

Task C /4

Find the wrong step, explain it, and give the correct answer.



Student A

Draw all **lines of symmetry** for a non-square rectangle.

1. Draw a vertical line through the middle.
2. Draw a horizontal line through the middle.
3. Draw a diagonal from corner to corner, so 3 lines in all.

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____



Student B

Does block letter F have a **line of symmetry**?

1. Draw a line down the middle of the F.
2. Say both sides look about the same.
3. Say F has 1 line of symmetry.

The mistake is in step: _____

What went wrong?

.....

Correct answer: _____

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Draw and Decide

Harder symmetry sorting with triangles, circles, and letters.

Task D

/10

Decide about mirror lines for shapes and capital letters.

WARM UP

1 An isosceles triangle has two equal sides and one **fold match**. How many **lines of symmetry** does it have?

Answer: _____

2 An equilateral triangle has 3 equal sides and 3 **fold matches**. How many **lines of symmetry** does it have?

Answer: _____

3 A scalene triangle has sides 3 in, 4 in, and 5 in with no **matching parts**. How many **lines of symmetry** does it have?

Answer: _____

PRACTICE

4 Block letter A folds left-right into **mirror images**. How many **vertical lines** does it have?

Answer: _____

5 Block letter H folds left-right and top-bottom into **mirror images**. How many **lines of symmetry** does it have?

Answer: _____

6 Block letter N cannot fold any way to make **matching parts**. How many **lines of symmetry** does it have?

Answer: _____

7 A circle with a line through the **center** folds into **matching parts**. A line that misses the **center** does not. Which line is a **line of symmetry**?

Answer: _____

PROBLEM SOLVING

8 A poster shows 3 squares and 2 non-square rectangles. How many **lines of symmetry** are there in all?

Answer: _____

9 A student draws all **lines of symmetry** for block letter X. It has 1 vertical and 1 horizontal line. How many **lines of symmetry** is that?

Answer: _____

10 Explain why a diagonal of a non-square rectangle is not a **line of symmetry**.

Answer: _____

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Show What You Know

Check your ideas and solve picture problems.

Task E Example done for you /3

Tick the correct answer for each symmetry question.

1. Which shape has a **line of symmetry**?
   - [x] An isosceles triangle that folds into two matching parts
   - [ ] A scalene triangle with sides 3 in, 4 in, 5 in
   - [ ] A wobbly blob with no matching fold
2. How many **lines of symmetry** does an equilateral triangle have?
   - [ ] 1
   - [ ] 2
   - [ ] 3
3. A student folds a non-square rectangle on its **diagonal**. What happens?
   - [ ] The halves match exactly, so it is a line of symmetry
   - [ ] The corners do not overlap, so it is not a line of symmetry
   - [ ] It makes 4 lines of symmetry
4. Which **capital letter** has 2 lines of symmetry?
   - [ ] F
   - [ ] N
   - [ ] H

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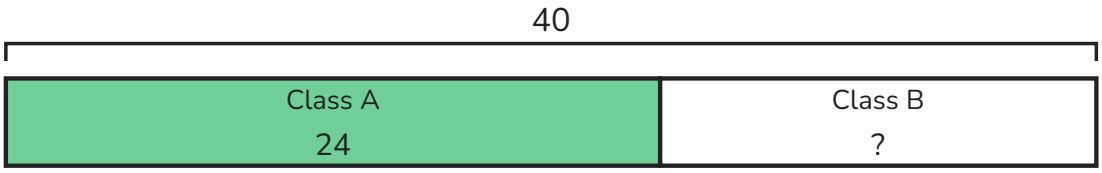
Mirror Match

Task F

/4

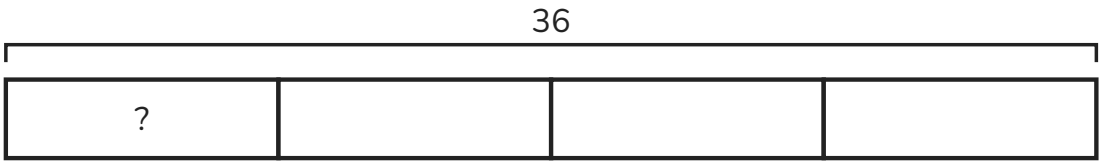
Use the bar model to solve each symmetry story.

1. Class A cut out 24 **symmetric stars**. Class B cut out some too. Together they cut out 40 **symmetric stars**. How many did Class B cut out?



Answer: _____ **stars**

2. 36 stickers with **line symmetry** are shared equally between 4 children. How many stickers does each child get?



Answer: _____ **stickers**

How did I do?

Circle a face for each line.

I can find a line of symmetry by folding to make matching parts.	☹	😐	☺
I can tell how many lines of symmetry a shape has.	☹	😐	☺
I can draw lines of symmetry for shapes and letters.	☹	😐	☺

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Answer sheet: Mirror Match

Task A

1. 4 (8 = 4 + 4)
2. 6 (12 = 6 + 6)
3. 5 (10 = 5 + 5)
4. 7 (14 = 7 + 7)

Task B

1. Yes
2. 0
3. 4
4. 2
5. 6
6. 2
7. 7
8. 20
9. 48
10. Both halves match exactly with no gaps or overlaps.

Task C

1. Step 3 is wrong: The diagonal does not make mirror images. Folded that way, the corners do not match. Correct answer: 2
2. Step 2 is wrong: About the same is not enough. The halves must be exact mirror images, and the F halves do not match. Correct answer: No

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Task D

1. 1
2. 3
3. 0
4. 1
5. 2
6. 0
7. The line through the center
8. 16
9. 2
10. When folded on the diagonal, the corners do not overlap, so the halves do not match exactly.

Task E

1. a) An isosceles triangle that folds into two matching parts
2. c) 3
3. b) The corners do not overlap, so it is not a line of symmetry
4. c) H

Task F

1. 16 stars
2. 9 stickers

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