# Homework/Extension
# Step 4: Reflections

## National Curriculum Objectives:

**Mathematics Year 6: (6P3) Describe positions on the full coordinate grid (all four quadrants)**
**Mathematics Year 6: (6P2) Draw and translate simple shapes on the coordinate plane, and reflect them in the axes**

## Differentiation:

**Questions 1, 4 and 7 (Varied Fluency)**
**Developing Reflect a shape in the x or y axis and record coordinates. Includes a regular shape with four sides.**
**Expected Reflect a shape in the x and y axis and reflect it again. Record coordinates. Includes an irregular shape with fives sides.**
**Greater Depth Reflect a shape in the x and y axis and reflect it again. Record coordinates. Includes an irregular shape with six sides.**

**Questions 2, 5 and 8 (Varied Fluency)**
**Developing Record the coordinates of the correctly reflected shape. 2 options to choose from. Includes regular shapes with up to four sides.**
**Expected Record the coordinates of the correctly reflected shape. 3 options to choose from. Includes irregular shapes with up to fives sides.**
**Greater Depth Record the coordinates of the correctly reflected shape. 3 options to choose from. Includes irregular shapes with up to six sides.**

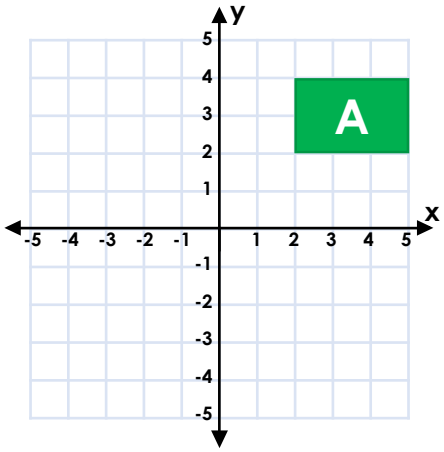
**Questions 3, 6 and 9 (Reasoning and Problem Solving)**
**Developing Prove whether the coordinates of a shape reflected in the x axis have been recorded correctly. Includes a regular shape with four sides.**
**Expected Prove whether the coordinates of a shape reflected twice in the x and y axis have been recorded correctly. Includes a regular shape with four sides.**
**Greater Depth Prove whether the coordinates of a shape reflected twice in the x and y axis have been recorded correctly. Includes an irregular shape with five sides.**

## More Year 6 Position and Direction resources.

## Did you like this resource? Don't forget to review it on our website.

# Reflections

**1. Reflect shape A in the x axis. Record the coordinates for the new shape.**




x axis

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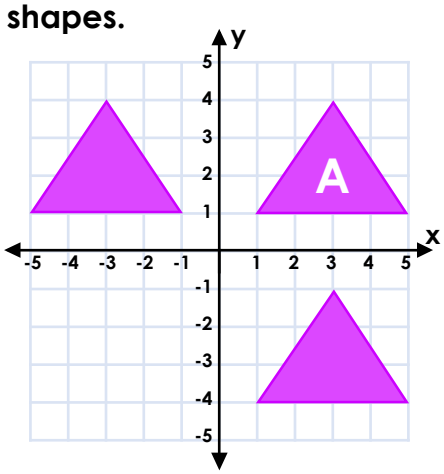
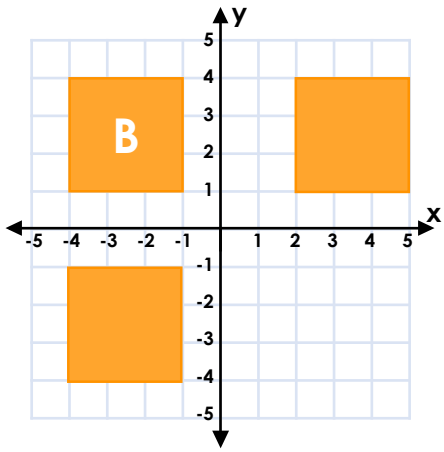
**2. Shapes A and B have been reflected. Write down the coordinates of the correctly reflected shapes.**




D

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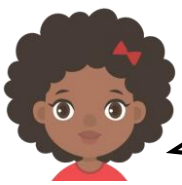
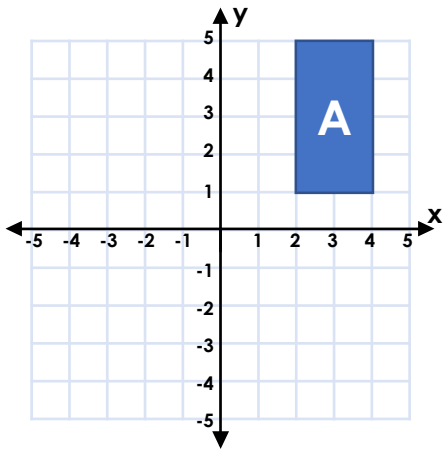
HW/Ext

**3. Shakira reflects shape A in the x axis. She says,**



My shape will have the following coordinates:
(-2, 1), (-2, 5), (-4, 1), (-4, 5)




**Is she correct? Prove it.**

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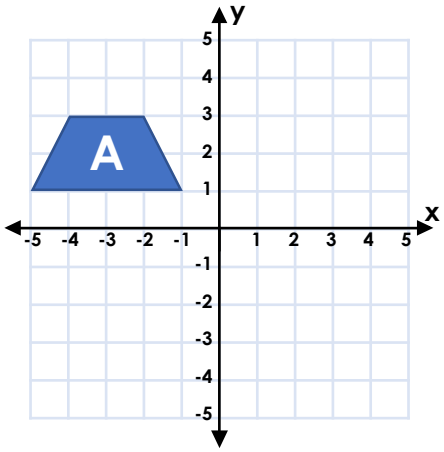
RPS
HW/Ext

# Reflections

**4. Reflect shape A in the x axis, then reflect the reflected shape again in the y axis. Record the coordinates for both new shapes.**



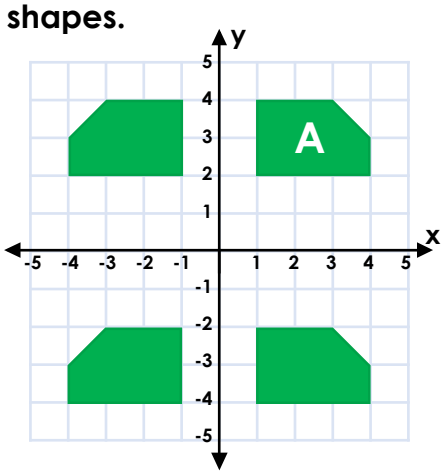

x axis ☐ ☐ ☐ ☐

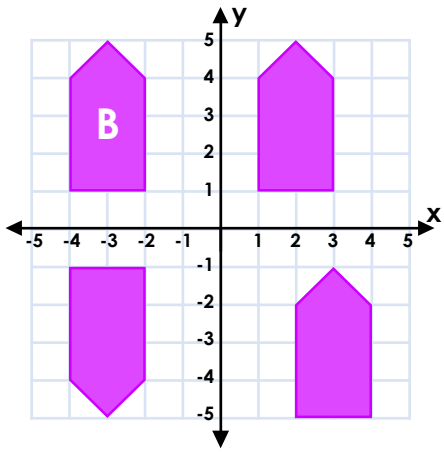
y axis ☐ ☐ ☐ ☐

E

VF
HW/Ext

**5. Shapes A and B have been reflected. Write down the coordinates of the correctly reflected shapes.**

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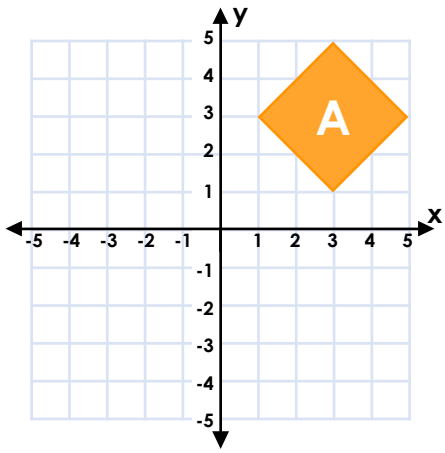
E

VF
HW/Ext

**6. Robbie reflects shape A in the x axis, then he reflects the reflected shape again in the y axis. He says,**

**After being reflected twice, my shapes will have the following coordinates:**
**(1, -3), (3, -1), (3, -5), (5, -3) and (-1, 3), (-3, 1), (-3, 5), (-5, 3)**



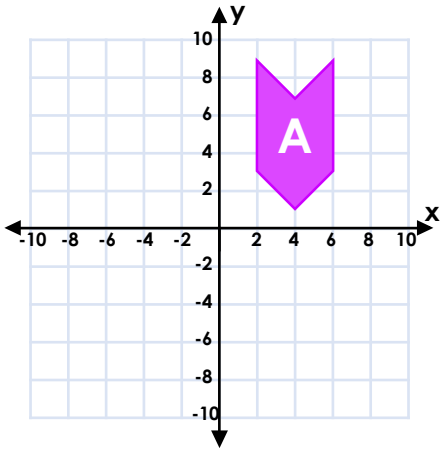

**Is he correct? Prove it.**

E

RPS
HW/Ext

# Reflections

**7. Reflect shape A in the x axis, then reflect the reflected shape again in the y axis. Record the coordinates for both new shapes.**




x axis ☐ ☐ ☐ ☐ ☐ ☐

y axis ☐ ☐ ☐ ☐ ☐ ☐

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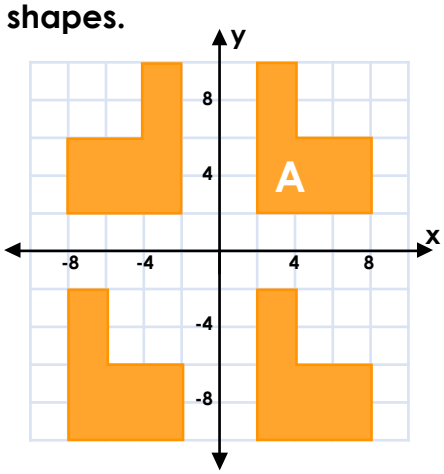
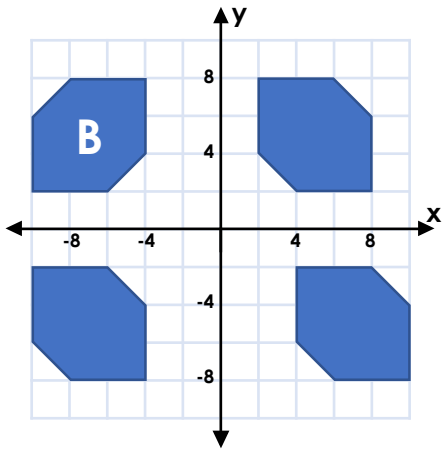
HW/Ext

**8. Shapes A and B have been reflected. Write down the coordinates of the correctly reflected shapes.**

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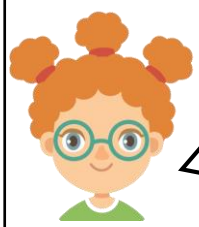
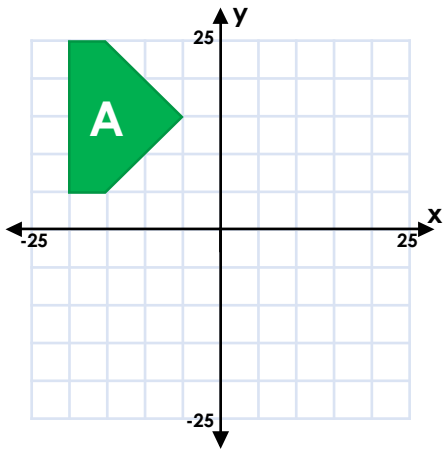
HW/Ext

**9. Martha reflects shape A in the y axis, then she reflects the reflected shape again in the x axis. She says,**



**After being reflected twice, my shapes will have the following coordinates:**
**(5, 5), (5, 25), (10, 5), (10, 25), (20, 15) and (5, -5), (5, -25), (10, -5), (10, -25), (20, -15)**




**Is she correct? Prove it.**

GD

RPS
HW/Ext

# Homework/Extension
# Reflections

## Developing

**1.** (2, -2), (2, -4), (5, -2), (5, -4)

**2.** A. (-1, 1), (-3, 4), (-5, 1)

B. (-1, -1), (-1, -4), (-4, -1), (-4, -4)

**3.** Shakira is incorrect. Various possible answers, for example: Shakira is incorrect because she has reflected shape A in the y axis; Shakira is incorrect because the correct coordinates should be: (2, -1), (2, -5), (4, -1), (4, -5).

## Expected

**4.** x axis (-1, -1), (-2, -3), (-4, -3), (-5, -1)

y axis (1, -1), (2, -3), (4, -3), (5, -1)

**5.** A. (-1, 2), (-1, 4), (-3, 4), (-4, 2), (-4, 3)

B. (-2, -1), (-2, -4), (-3, -5), (-4, -1), (-4, -4)

**6.** Robbie is incorrect. Various possible answers, for example: Robbie is incorrect because he has reflected the original shape A in the y axis, not its reflected shape; Ribbie is incorrect because the correct coordinates of the second reflection should be: (-1, -3), (-3, -1), (-3, -5), (-5, -3).

## Greater Depth

**7.** x axis (4, -1), (2, -3), (6, -3), (2, -9), (6, -9), (4, -7)

y axis (-4, -1), (-2, -3), (-6, -3), (-2, -9), (-6, -9), (-4, -7)

**8.** A. (-2, 2), (-2, 10), (-4, 6), (-4, 10), (-8, 2), (-8, 6)

B. (-4, -4), (-4, -8), (-6, -2), (-8, -8), (-10, -2), (-10, -6)

**9.** Martha is incorrect. Various possible answers, for example: Martha is incorrect because she has translated shape A in the y axis, and then reflected the wrong shape in the x axis; Martha is incorrect because the correct coordinates should be: (5, 15), (15, 5), (15, 25), (20, 5), (20, 25) and (5, -15), (15, -5), (15, -25), (20, -5), (20, -25).