Year 8 Bearings and Transformations – Developing

ANSWER KEY HappyKids.fit

Answers and worked solutions · 10 questions

A. Use transformations

1. **(5, −2.5)**

((4 + 6) ÷ 2, (−7 + 2) ÷ 2) = (5, −2.5)

2. **(5, 5)**

Changes in x and y: 6 − (1) = 5, 7 − (2) = 5

3. **220°**

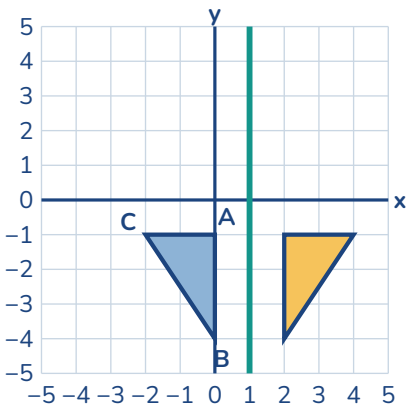
Bearings are measured clockwise from north, with three figures
South is 180°; B is 40° past south
180 + 40 = 220°

4. **Bearings are less than 360°, so subtract 180° instead: 050°.**

Error: a bearing cannot be more than 360°
The back bearing differs by 180°
230 − 180 = 050°

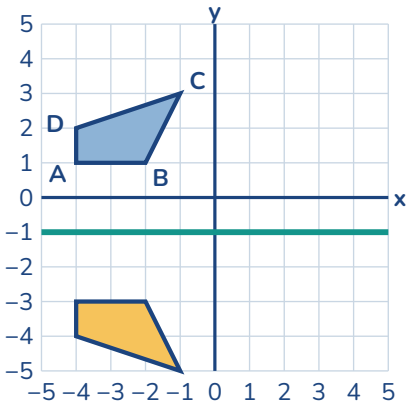
5. **A' (2, −1), B' (2, −4), C' (4, −1)**

Each image point is the same distance from x = 1 on the other side
A (0, −1) → (2, −1), B (0, −4) → (2, −4), C (−2, −1) → (4, −1)



6. **A' (−4, −3), B' (−2, −3), C' (−1, −5), D' (−4, −4)**

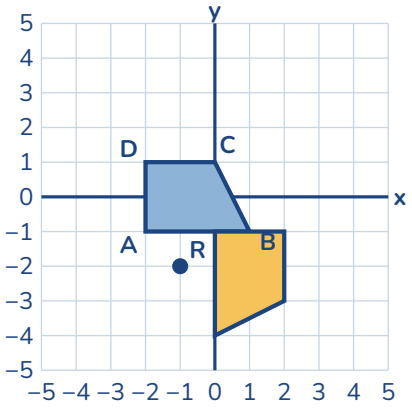
Each image point is the same distance from y = −1 on the other side
A (−4, 1) → (−4, −3), B (−2, 1) → (−2, −3), C (−1, 3) → (−1, −5), D (−4, 2) → (−4, −4)



7. **A' (0, −1), B' (0, −4), C' (2, −3), D' (2, −1)**

You need the centre, the angle and the direction; tracing paper helps

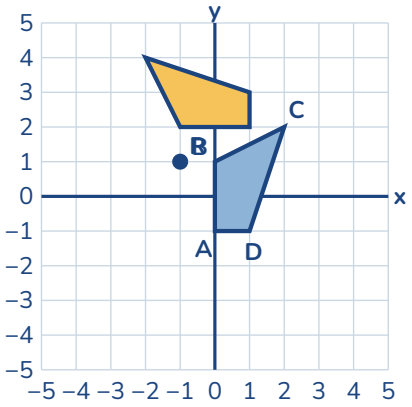
A (−2, −1) → (0, −1), B (1, −1) → (0, −4), C (0, 1) → (2, −3), D (−2, 1) → (2, −1)



8. **A' (1, 2), B' (−1, 2), C' (−2, 4), D' (1, 3)**

You need the centre, the angle and the direction; tracing paper helps

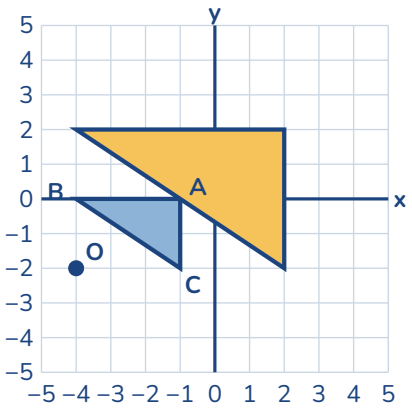
A (0, −1) → (1, 2), B (0, 1) → (−1, 2), C (2, 2) → (−2, 4), D (1, −1) → (1, 3)



9. **A' (2, 2), B' (−4, 2), C' (2, −2)**

Multiply the distance from O to each corner by 2

A (−1, 0) → (2, 2), B (−4, 0) → (−4, 2), C (−1, −2) → (2, −2)



10. **A' (2, −2), B' (2, 4), C' (−2, −2)**

Multiply the distance from O to each corner by 2

A (0, −3) → (2, −2), B (0, 0) → (2, 4), C (−2, −3) → (−2, −2)

