Year 8 Bearings and Transformations – Challenge

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Year 8 · Maths · Bearings, Coordinates and Transformations · Level 3 Challenge · 8 questions

Name _____ **Date** _____

A. Think like a mathematician

1. Triangle P has corners (3, 2), (2, 1), (2, 4). Triangle Q has corners (2, −3), (1, −2), (4, −2), in the same order. Describe fully the single transformation that maps P onto Q.

Answer _____

2. Chen finds the midpoint of (−4, 5) and (6, −1) by halving the differences and gets (5, −3). Explain the mistake and find the midpoint.

Answer _____

3. The bearing of B from A is 285°. Dina says the bearing of A from B is 465°. Explain the mistake and give the correct bearing.

Answer _____

4. Farah says an enlargement with scale factor 2 doubles the area of a shape. Is Farah right? Explain.

Answer _____

5. Gus says to describe a rotation you only need the angle. Is Gus right? Explain.

Answer _____

6. Chen says a translation by (3, −2) followed by a translation by (−3, 2) returns a shape to where it started. Is Chen right? Explain.

Answer _____

7. Point P (−4, −2) is translated by the vector (5, 2) (written as a column vector in your book). Write the coordinates of its image P'.

Answer _____

8. Find the midpoint of the line segment from (−7, 6) to (1, 1).

Answer _____