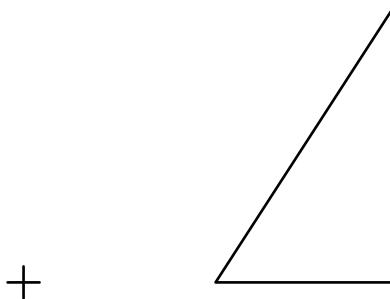
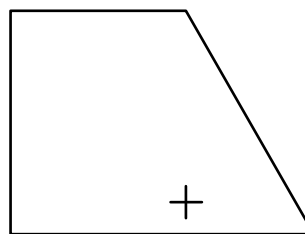
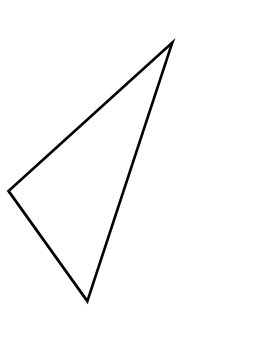


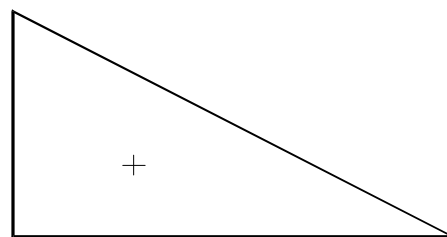
- Each of the following is either a reflection or a rotation. Give the full name of each.
 - $(2,7) \rightarrow (7,2)$
 - $(2,-7) \rightarrow (-7,-2)$
 - $(-2,-7) \rightarrow (2,-7)$
 - $(-2,7) \rightarrow (2,-7)$
 - $(2,-2) \rightarrow (2,-2)$
- For each of the following mappings, name as many correct transformations *of any type* which will produce the desired result. *You may use short names or symbols for the transformations.*
 - $(0, 7) \rightarrow (0, -7)$
 - $(0, 7) \rightarrow (0, 21)$
- Find the equation of the image of the line $y = \frac{5}{7}x + \frac{4}{7}$ after the transformation $(x, y) \rightarrow (2x + 14, 4y)$.
- Find the formula for a rotation of 270° about the point $(-3, 7)$.
- Construct each of the following transformations accurately.
 - Rotation of 100° about the point marked by the crosshairs.
 - Dilatation $k = -2$ from the centre marked by the crosshairs.



- c) Reflection in the given mirror line.

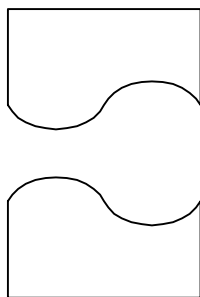


- d) Rotation of -75° about the "+" symbol.

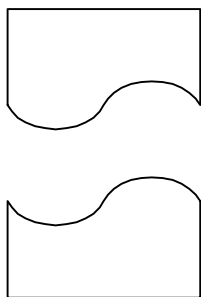


6. Identify each of the following transformations. Where appropriate, sketch the *approximate* location of the centre or the mirror line. If the transformation is a rotation, give the size of the rotation in degrees.

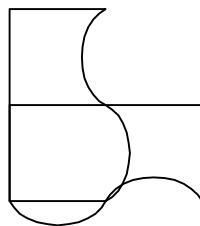
a)



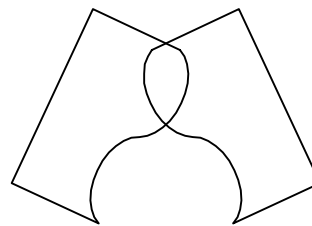
b)



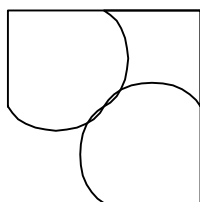
c)



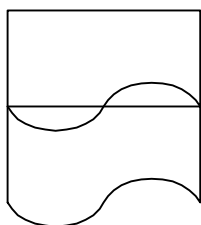
d)



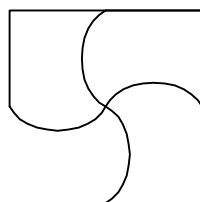
e)



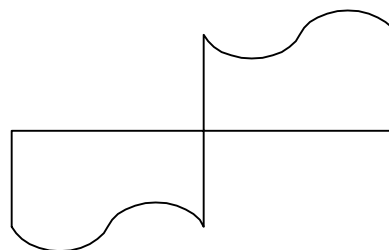
f)



g)



h)



Answers:

1. a) reflection in the line $y = x$
 c) reflection in the y -axis
 e) reflection in the line $y = -x$
2. a) $T_{0,-14}$ or R_x or R_{180° or D_{-1}
 b) D_3 or $T_{0,14}$
3. $y = \frac{10}{7}x - \frac{124}{7}$
 4. $(x, y) \rightarrow (y - 10, 4 - x)$
6. a) reflection in a horizontal line
 b) rotation of 180° or dilatation $k = -1$
 c) rotation of 90°
 d) reflection in a vertical line
 e) reflection in a line with slope 1
 f) vertical translation
 g) rotation of 90°
 h) rotation of 180° or dilatation $k = -1$