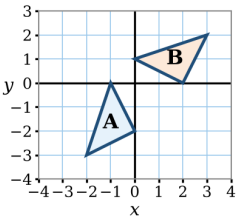
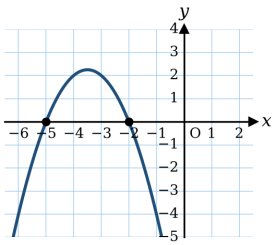
Day 188	A Tier 10-a-day
1 (a) A train leaves London at 2025. The journey takes 1 hours 22 minutes. Work out the time it ends. (b) Change 2.2 hours into hours and minutes.	
2 The curve C has equation $y = x^2 - 4x - 21$ (a) Find the coordinates of the points where C crosses the x-axis. (b) Find the coordinates of the turning point of C.	
3 By rounding each number to 1 significant figure, estimate the value of $\frac{5.9 \times 23}{0.81}$	
4 a : b = 4 : 5 b : c = 2 : 5 (a) Work out the ratio a : b : c (b) a, b and c add up to 86. Work out the value of c.	
5 The price of a product increases by 12% each year for 2 years. Work out the overall percentage increase over the 2 years.	

Day 188 **A Tier 10-a-day**

6 Describe fully the single transformation that maps shape A onto shape B.



7 The diagram shows the graph of $y = -x^2 + bx + c$.
Find the value of b and the value of c.



8 A solid hemisphere has radius 11 cm.
Work out the total surface area of the hemisphere.
Give your answer in terms of π.

9 The point P(3, 4) lies on a circle with centre O(0, 0).
(a) Work out the equation of the circle, in the form $x^2 + y^2 = r^2$.
(b) Find the equation of the tangent to the circle at P.

10 A bag contains 3 mint and 6 fruit sweets.
Two sweets are taken at random without replacement.
Work out the probability that the two sweets are different colours.