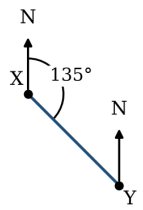
Day 215 **A Tier 10-a-day**

1 The bearing of Y from X is 135°.
Work out the bearing of X from Y.
The diagram is not drawn accurately.



2 $f(x) = 3x + 6$
$g(x) = x^2 + 8$
Find $fg(2)$

3 The two triangles are similar.
Work out the value of x.
The diagrams are not drawn accurately.



4 The scale of a map is 1 : 25000.
Two towns are 2 cm apart on the map.
Work out the real distance between the towns in kilometres.

5 Triangle XYZ: angle Y = 90°, XZ = 17 cm, XY = 15 cm.
Triangle STU: angle U = 90°, ST = 17 cm, SU = 15 cm.
Are the two triangles congruent?
Give a reason for your answer.

Day 215	A Tier 10-a-day
6 A colony has 15,000 and grows by 6% per day. (Calculator) Work out the number of bacteria after 3 days. Give your answer to the nearest whole number.	
7 Cara and Nia each invest £5000 for 2 years. (Calculator) Cara's account pays 2% simple interest per year. Nia's account pays 2% compound interest per year. Work out how much more interest Nia earns than Cara.	
8 Solve $x^2 \leq 144$	
9 A straight line passes through the points (3, −3) and (4, −8). Find the equation of the line.	
10 (a) Show that $0.\dot{1}\dot{6} = \frac{16}{99}$ (b) Hence write $2.\dot{1}\dot{6}$ as a mixed number in its simplest form.	