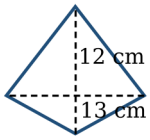
Day 197 **A Tier 10-a-day**

1 The diagram shows a kite.
The diagonals are 13 cm and 12 cm and cross at right angles.
Work out the area of the kite.
The diagram is not drawn accurately.



2 3 pumps take 5 hours to empty a pond.
All the pumps work at the same rate.
How many pumps are needed to empty a pond in 3 hours?

3 Simplify fully

(a) $\frac{16x^5y^2}{2x^3y^3}$

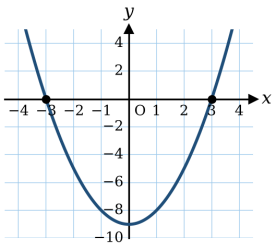
(b) $\frac{(4x^2)^2}{3x^3}$

4 A square and a regular pentagon share the side AB and are on opposite sides of it.
The two shapes meet at the point A.
Work out the size of the angle at A that is not inside either shape.

5 Jack reads $\frac{3}{8}$ of a book and has now read 60 pages.
How many pages does the whole book have?

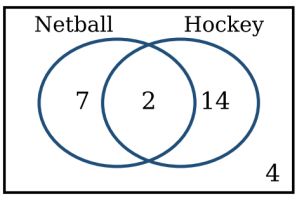
Day 197 **A Tier 10-a-day**

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



7 Write the recurring decimal $0.\dot{8}7\dot{0}$ as a fraction in its simplest form.

8 The Venn diagram shows information about 27 people.
One person is chosen at random.
(a) Find the probability that the person is in Netball only.
(b) Find the probability that the person is in neither set.



9 Make x the subject of $y = \frac{4x - 1}{2x - 3}$

10 A bag contains 7 red counters and 2 blue counters.
Three counters are taken at random without replacement.
Work out the probability that exactly one of the three counters is blue.