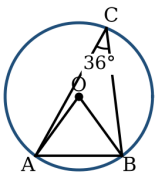
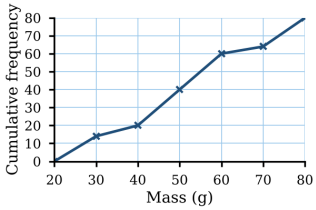
Day 191 **S Tier 10-a-day**

1 Solve $\frac{4}{x-3} - \frac{6}{x+2} = \frac{1}{3}$

2 A, B and C are points on a circle, centre O.
Angle ACB = 36°.
(a) Work out the size of angle AOB.
(b) Work out the size of angle OAB.
The diagram is not drawn accurately.

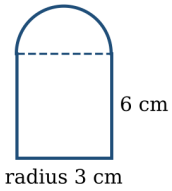


3 The cumulative frequency graph gives information about the masses of 80 apples picked from a tree.
(a) Find an estimate for the median and the interquartile range.
(b) Estimate how many of the 80 had a mass greater than 45.



4 A bag contains marbles.
$\frac{1}{5}$ of the marbles are yellow and $\frac{2}{3}$ of the marbles are black.
The rest of the marbles, 6 of them, are white.
How many yellow marbles are there?

5 Solve $4x^2 + 5 = 12x$

Day 191	S Tier 10-a-day
6 Fatima invests £5,500 for 8 years at 6% per year compound interest. Work out the value of the investment at the end of the 8 years. Give your answer to the nearest penny. (Calculator)	
7 A solid is made from a cylinder of height 6 cm and a hemisphere. Both have radius 3 cm. Work out the total volume of the solid. Give your answer in terms of π.  	
8 A circle has centre C(−5, 1) and passes through the point P(1, −4). Find an equation of the circle.	
9 Given that $(a + \sqrt{10})(b + \sqrt{10}) = 13 + 4\sqrt{10}$, where a and b are positive integers with $a < b$, find the values of a and b.	
10 Machine A makes 50% of the bolts in a factory. Machine B makes the rest. 70% of the bolts from machine A are faulty. 20% of the bolts from machine B are faulty. (a) Work out the probability that a bolt chosen at random is faulty. (b) A faulty bolt is found. Work out the probability that it was made by machine A.	