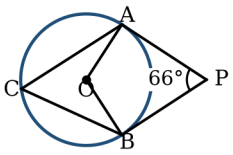
Day 339	IGCSE 10-a-day
1 x : y = 4 : 9 Work out the ratio (6x − 1y) : (3x + 6y) Give your answer in its simplest form.	
2 A flight leaves London at 06:45 (London time). It takes 5 hours 10 minutes. When it is 12:00 in London it is 17:00 in Delhi. At what time, in Delhi time, does the flight land? Say if it is on a different day.	
3 Solve $\frac{x-2}{6} - \frac{x-6}{2} = 4$	
4 PA and PB are tangents to a circle, centre O. C is a point on the circle. Angle APB = 66°. (a) Work out the size of angle AOB. (b) Work out the size of angle ACB. The diagram is not drawn accurately. 	
5 $y = -3x^2 + 5x + \frac{8}{x^2}$ Find $\frac{dy}{dx}$.	

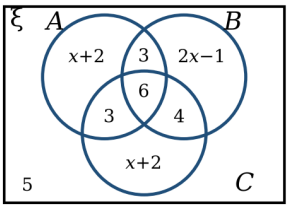
Day 339 **IGCSE 10-a-day**

6 A population of fish starts at 3,000 and grows by 20% each year.
After how many whole years will the population first be at least double its starting value? (Calculator)

7 A van is bought for £12,000.
Its value falls by 15% each year.
Work out its value after 3 years. (Calculator)

8 $y = 4x + \frac{36}{x}$
Find the values of x for which y is increasing.

9 The Venn diagram shows information about 40 shoppers.
A: bought fruit B: bought bread C: bought milk
(a) Find the value of x.
(b) Find n(A) and n(B ∪ C)′.



10 A piece of wire 112 cm long is cut into two pieces. One piece is bent to form a square of side x cm. The other piece is bent to form a rectangle whose length is three times its width.
(a) Show that the total area, A cm^2, enclosed by the two shapes is $A = x^2 + \frac{3(112 - 4x)^2}{64}$.
(b) Find the value of x for which A is least, and work out this least area.