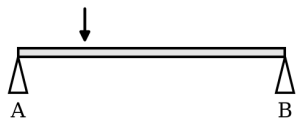
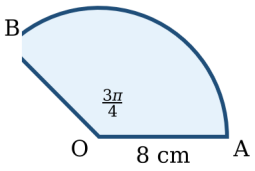
Day 76	A Level Maths: C Tier 10-a-day
1 Seven daily sunshine readings (hours) from the Large Data Set are: n/a, 2.6, 0.6, 0.4, n/a, 0, 1.8. Here 'n/a' means no reading was recorded. Leaving these out, find the mean to 3 s.f.	
2 Divide $f(x) = 2x^3 - 10x^2 + 9x + 6$ by $(x - 3)$. Find the quotient and the remainder.	
3 A particle of mass 2 kg changes its speed from 1 m s^{-1} to 7 m s^{-1}. Find the increase in its kinetic energy.	
4 Solve $\cos 2x = \frac{\sqrt{3}}{2}$ for $0° \leq x \leq 180°$.	
5 A uniform beam AB of mass 20 kg and length 6 m rests horizontally on supports at A and B. A load of mass 5 kg is placed on the beam 1.5 m from A. Take g = 9.8 m s^{-2}. Find the reaction at B.  	

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6 The diagram shows sector OAB of a circle.
Find, in terms of π, (a) the arc length AB, (b) the area of the sector.



7 f(x) = 2x − 5 and g(x) = 2x + 3.
Find the value of gf(1).

8 Solve $-2\cos^2 x + \sin x + 1 = 0$
for $0° \leq x \leq 360°$.

9 $f(x) = x^3 + x^2 - 22x - 40$
(a) Show that (x − 5) is a factor of f(x).
(b) Factorise f(x) completely.

10 X is the number of heads when a fair coin is tossed 6 times.
Can X be modelled by a binomial distribution?
Give a reason.