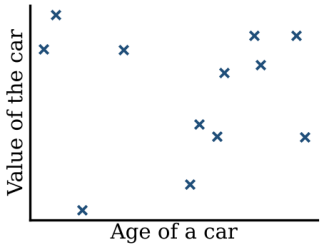
**Day 26** **A Level Maths: C Tier 10-a-day**

**1** A sector of a circle has radius 12 cm and angle 1.5 radians.
Find (a) the arc length, (b) the perimeter of the sector.

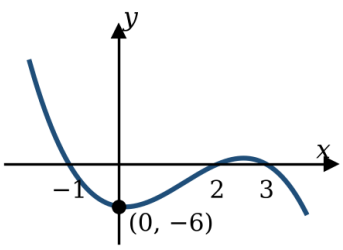
**2** The scatter diagram shows age of a car and value of the car for a group.
Describe the correlation.

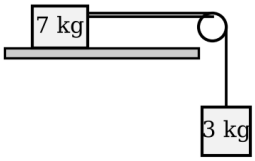



**3** A car decelerates uniformly from 12 m $s^{-1}$ to rest in 10 s. Find (a) the deceleration, (b) the distance travelled while decelerating.

**4** The table shows values of y = f(x).
x: 2 3 4 5 6
y: 4.3 7.9 7.7 3.8 2.6
Use the trapezium rule to estimate the area under the curve between x = 2 and x = 6.

**5** The diagram shows the curve y = f(x), where f(x) is a cubic. Find f(x) in the form k(x − a)(x − b)(x − c).



| Day 26 | A Level Maths: C Tier 10-a-day |
|---|---|
| **6** A 7 kg particle on a smooth horizontal table is joined by a light string over a smooth pulley to a hanging 3 kg particle, as shown. The system is released from rest. Take g = 9.8 m $s^{-2}$. Find the tension.<br><br> | |
| **7** Solve the simultaneous equations:<br>$y = x^2 - 15$, $y = x + 5$. | |
| **8** Write down the exact values of<br>(a) cosec 120° (b) sec 135° | |
| **9** The line $y = 4x + k$ is a tangent to the curve $y = x^2 + 10x - 4$.<br>Find the value of k. | |
| **10** The values x are coded using $y = (x - 20) \div 5$.<br>The coded values have mean $\bar{y} = 3.9$ and standard deviation 2.4.<br>Find the mean and standard deviation of x. | |