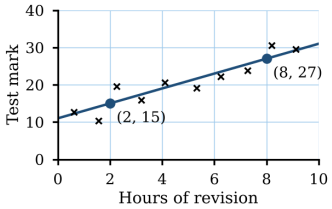
Day 97	S Tier 10-a-day
1 Work out the value of $\frac{2p - q}{r}$ when p = 5, q = −2 and r = 1.	
2 In triangle PQR, side QR is extended to S. Angle QPR = (4x − 15)° Angle PQR = (x + 25)° Angle PRS = (3x + 56)° (a) Work out the value of x. (b) Work out the size of angle PRQ.	
3 The curve $y = x^2 - 6x + 8$ crosses the x-axis at the points A and B. (a) Find the coordinates of A and B. (b) Find the coordinates of the minimum point of the curve.	
4 Rationalise the denominator of $\frac{22}{4\sqrt{3}}$ Give your answer in its simplest form.	
5 A sector of a circle has radius 6 cm. The length of the arc of the sector is $\frac{9}{2}\pi$ cm. (a) Work out the angle of the sector. (b) Work out the area of the sector. Give your answer to (b) in terms of π.	

Day 97 **S Tier 10-a-day**

6 The scatter graph shows hours of revision (x) and test mark (y).
The line of best fit passes through (2, 15) and (8, 27).
(a) Find its equation in the form y = mx + c.
(b) Explain what its gradient tells you.



7 A point A is on level ground in line with the base of a cliff. (Calculator)
The angle of elevation of the top of the cliff from A is 55°.
B is a point on the same line, 40 m further from the cliff than A.
The angle of elevation of the top of the cliff from B is 21°.
Work out the height of the cliff. Give your answer to 1 decimal place.

8 Simplify fully $\frac{x^2 - x - 2}{x^2 - 7x} \times \frac{x^2 + 4x}{x + 1}$

9 $N = 2^4 \times 3 \times 5^3$
How many of the factors of N are even numbers?

10 A radioactive sample has a mass of 480 g. Its mass halves every 8 hours.
(a) Work out the mass after 16 hours.
(b) After how many hours will the mass first be less than 5 g?