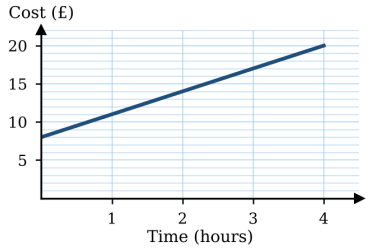
Day 329	B Tier 10-a-day

1 P is directly proportional to n.
When n = 10, P = 120.
Find the value of n when P = 180.

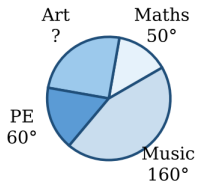
2 Here is a number machine.
Input → × 2 → + 6 → Output
(a) The input is 12. Work out the output.
(b) The output is 14. Work out the input.

3 The scale of a map is 1 : 20,000.
Two towns are 17.5 cm apart on the map.
Work out the real distance between the towns.
Give your answer in kilometres.

4 A company hires out bikes. There is a fixed charge plus a cost for each hour.
The graph shows the total cost.
(a) Write down the fixed charge.
(b) Work out the cost for each hour.



5 The pie chart shows the favourite choices of 72 people.
The angle for Art is not shown.
Work out how many people chose Art.



Day 329	B Tier 10-a-day
6 $E = \frac{1}{2}mv^2$ Work out the value of E when m = 6 and v = 5	
7 The length of a rectangle is 9 cm and its width is 18 cm. Both measurements are correct to the nearest cm. Work out the upper bound for the perimeter of the rectangle.	
8 An isosceles trapezium has parallel sides of length 16 m and 6 m. Each sloping side is 13 m long. (a) Work out the perpendicular height of the trapezium. (b) Work out the area of the trapezium.	
9 There are 6.8×10^6 bacteria in a dish. The number triples every day. How many are there after 5 days? Give your answer in standard form.	
10 A boat sails 6 m on a bearing of 270° from P to Q, then 8 m on a bearing of 000° to R. (Calculator) (a) Work out the distance PR. (b) Work out the bearing of R from P. Give your answers correct to 1 decimal place. 