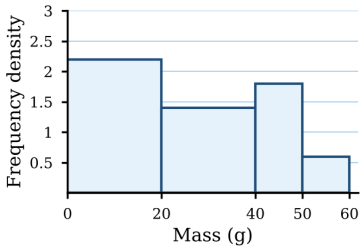
Day 313	A Tier 10-a-day
1 A semicircle has diameter 8 cm. Work out, in terms of π, (a) the perimeter of the semicircle, (b) the area of the semicircle.	
2 (a) A film starts at 1155. The film lasts 3 hours 56 minutes. Work out the time it ends. (b) Change 3.3 hours into hours and minutes.	
3 (a) Solve $-1 < 4x - 5 \leq 27$ (b) Write down all the integer values of x that satisfy this inequality.	
4 Work out the value of (a) $4^{\frac{3}{2}}$ (b) $216^{\frac{-1}{3}}$	
5 The mean of the five numbers 25, 12, x, 21, 4 is 14. Work out the value of x.	

Day 313 **A Tier 10-a-day**

6 The line L has equation $y = \frac{3}{2}x - 4$

Find the equation of the line that is perpendicular to L and passes through the point (0, 4).

7 The histogram shows information about the mass of some items.
(a) Work out the number of items with a mass in the class 40 to 50 g.
(b) Work out an estimate for the number with a mass greater than 45 g.



8 A solid cone has base radius 8 cm and perpendicular height 6 cm.
Work out the total surface area of the cone.
Give your answer in terms of π.

9 The table gives information about 100 measurements.
A histogram is drawn using this information.
(a) Work out the missing frequency.
(b) Work out the height of the bar for the class $20 < m \leq 35$.

Mass, m (g)	Frequency
$0 < m \leq 10$	?
$10 < m \leq 20$	16
$20 < m \leq 35$	42
$35 < m \leq 40$	12

10 A cyclist travels 380 metres in 16.5 seconds.
The distance is correct to the nearest 10 metres and the time to the nearest 0.1 second.
(a) Work out the upper bound and the lower bound of the speed in m/s.
(b) Write the speed to a suitable degree of accuracy. Give a reason for your answer.