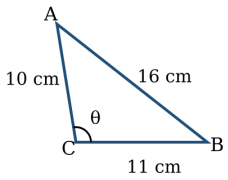
Day 297 **S Tier 10-a-day**

1 Here are five numbers: $2x + 6$, $2x - 1$, $x + 1$, $x + 6$, $3x - 1$.
The mean of the five numbers is 13.
(a) Work out the value of x.
(b) Work out the range of the five numbers.

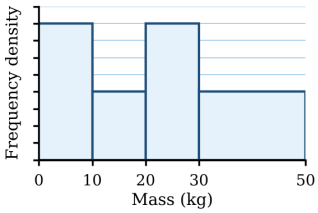
2 Rationalise the denominator of $\frac{24}{\sqrt{6}}$
Give your answer in its simplest form.

3 The lengths of the sides of a right-angled triangle are x cm, (x + 7) cm and (x + 9) cm.
The longest side is (x + 9) cm.
(a) Show that $x^2 - 4x - 32 = 0$
(b) Hence work out the area of the triangle.

4 The diagram shows triangle ABC. (Calculator)
(a) Work out angle ACB, marked θ, to 1 decimal place.
(b) Work out the area of triangle ABC to 3 significant figures.
The diagram is not drawn accurately.



5 Omar invests £1,000 for 5 years at 2% per year simple interest.
Jess invests £1,000 for 5 years at 2% per year compound interest.
Work out how much more interest Jess earns than Omar.
Give your answer to the nearest penny.
(Calculator)

Day 297	S Tier 10-a-day
6 A bus travels the first half of a journey at 30 km/h. It travels the second half of the same journey at 45 km/h. Work out the average speed for the whole journey.	
7 Solve $4 \sin x° - 6 = -8$ for $0 \leq x \leq 360$	
8 Work out the exact value of tan 45° + tan 30° Give your answer in its simplest form, as a fraction or surd. Do not use a calculator.	
9 The histogram shows the masses of parcels delivered by a courier. 320 of them had a mass between 30 and 50 kg. (a) How many had a mass between 20 and 30 kg? (b) How many parcels are there in total? 	
10 A train travels a distance of 100 km, correct to 1 significant figure. The journey takes 4 hours, correct to the nearest whole number. Work out the lower bound of the speed. Give your answer correct to 3 significant figures. (Calculator)	