### 3rd December

**Calculate the volume.**
Give your answer in terms of $\pi$.

![Diagram of a cylinder with dimensions 8 cm and 10 cm]

- A shop is having a sale. There is a 30% discount on all TVs and 20% discount on all DVD players.

In the sale, Jimmy buys a TV for £224 and a DVD player for £48.

How much would the TV and DVD player cost normally?

- A radioactive substance decays with time. The mass of the substance reduces by 8% each year.

How many years will it take for 400kg of the substance to decay to a mass of less than 100kg?

- A group of students were asked to complete a puzzle. The histogram shows the distribution of the times taken.

Work out how many students took between 40 and 50 seconds to complete the puzzle.

![Histogram showing time distribution]

Calculate an estimate of the number of students who took over 60 seconds to complete the puzzle.

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