As outcomes, Year 8 pupils should, for example:	As outcomes, Year 9 pupils should, for example:

Use algebraic methods to solve simple non-linear equations. For example:

• Solve these equations exactly.
  Each has two solutions.

  a. $c^2 + 24 = 60$ c. $x^2 - 5 = 220$
 b. $\dfrac{9}{y + 2} = y + 2$ d. $3 = \dfrac{12}{x^2}$

Use systematic trial and improvement methods and ICT tools to find solutions, or approximate solutions, to equations.

Use a **calculator** to answer questions such as:

• Solve these equations, giving answers correct to two decimal places:
  a. $s^3 = 30$ c. $z^3 - z = 70$
  b. $a^3 + a = 50$ d. $5.5p^3 = 9.504$

• The product of three consecutive odd numbers is 205 143. Find the numbers.

• A cuboid has a square cross-section (side x cm), height 20cm and total surface area 800cm^2. Form and solve an equation in x, giving the answer correct to one decimal place.

Set up an equation for a problem and find an approximate solution using a **spreadsheet** or a **graph plotter**. For example:

• A small open box is made by starting with a sheet of metal 20 cm by 20cm, cutting squares from each corner and folding pieces up to make the sides.
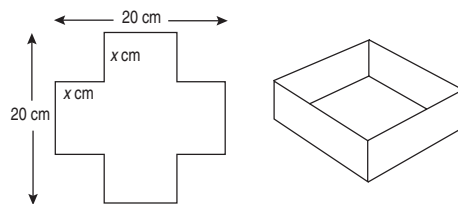
The box is to have a capacity of 450 cm^3 to its rim. Use a **spreadsheet** to find what size of square, to the nearest millimetre, should be cut from the corners.

Use a **graphical calculator** or **graph plotting program** to find what size of square should be cut from the corners to make a box with the maximum possible volume.