Use a calculator

1. A field is 50 m in width and 110 m in length.

    The width is given correct to the nearest 5 metres.

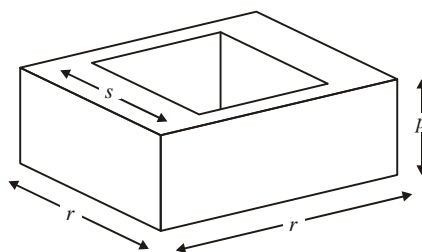   The length is given correct to the nearest 10 metres.

    Find the maximum area of the field.

Don't use a calculator

2. (a) Work out $8^{\frac{2}{3}}$ (b) Work out $64^{-\frac{1}{3}}$

    Give your answer as a fraction.

3. A cuboid has a square hole cut through it.
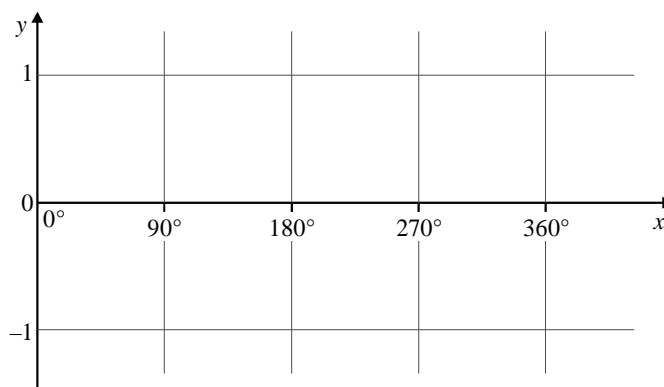   The dimensions are shown on the diagram.

    The following formulae represent various lengths, areas or volumes of the solid.
    For each formula state whether it represents a length (**L**), an area (**A**) or a volume (**V**).

    $4pr$ represents ....

    $8(p + r + s)$ represents ....

    $p(r^2 - s^2)$ represents ....

4. (a) Sketch the graph of $y = \sin x$ for values of x from $0°$ to $360°$.
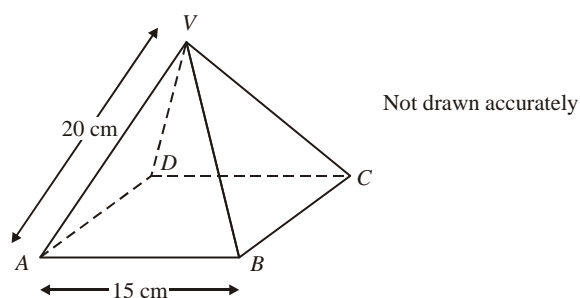

    (b) One solution of the equation $\sin x = 0.92$ is $x = 67°$.

         Use your sketch graph to find another solution of this equation.

    (c) Use your sketch graph to work out the value of $\sin 293°$.
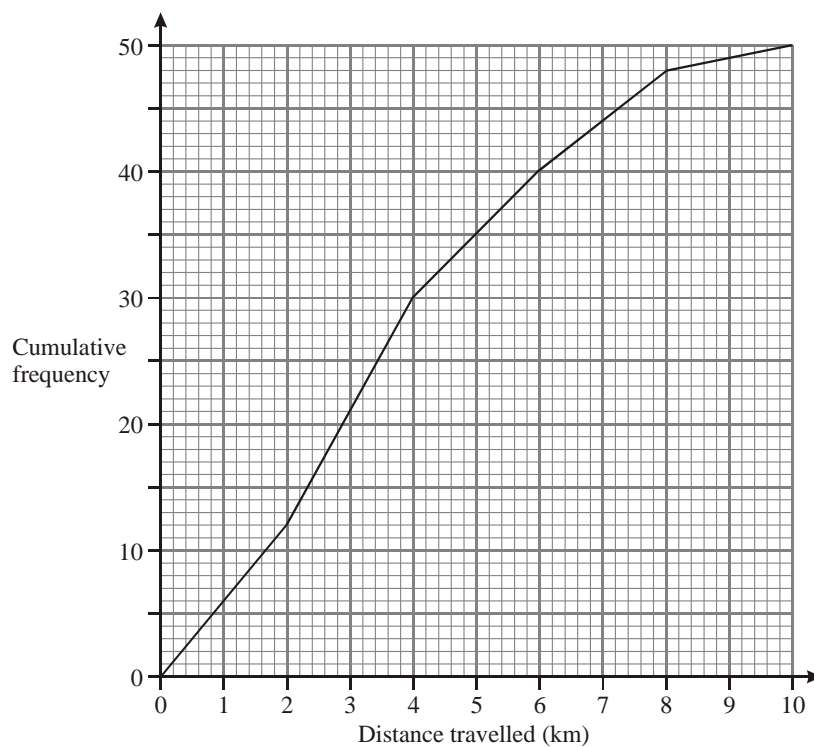
5. *VABCD* is a right pyramid on a square base. *V* is vertically above the centre of the square.
VA = VB = VC = VD = 20 cm
  AB = 15 cm

Not drawn accurately

a)   The base is square. Find the length AC.

b)   Calculate the angle between the edge *VA* and the base *ABCD*.

6.   The table shows the distances travelled to school by 50 pupils living in a town.

Distance travelled, d (km)	Frequency
$0 < d \le 2$	12
$2 < d \le 4$	18
$4 < d \le 6$	10
$6 < d \le 8$	8
$8 < d \le 10$	2

(a)   Calculate an estimate of the mean distance travelled to school by these pupils.

(b)   The distances travelled are shown on the cumulative frequency diagram.

Use the cumulative frequency diagram to estimate   (i)   the median,   (ii)   the interquartile range