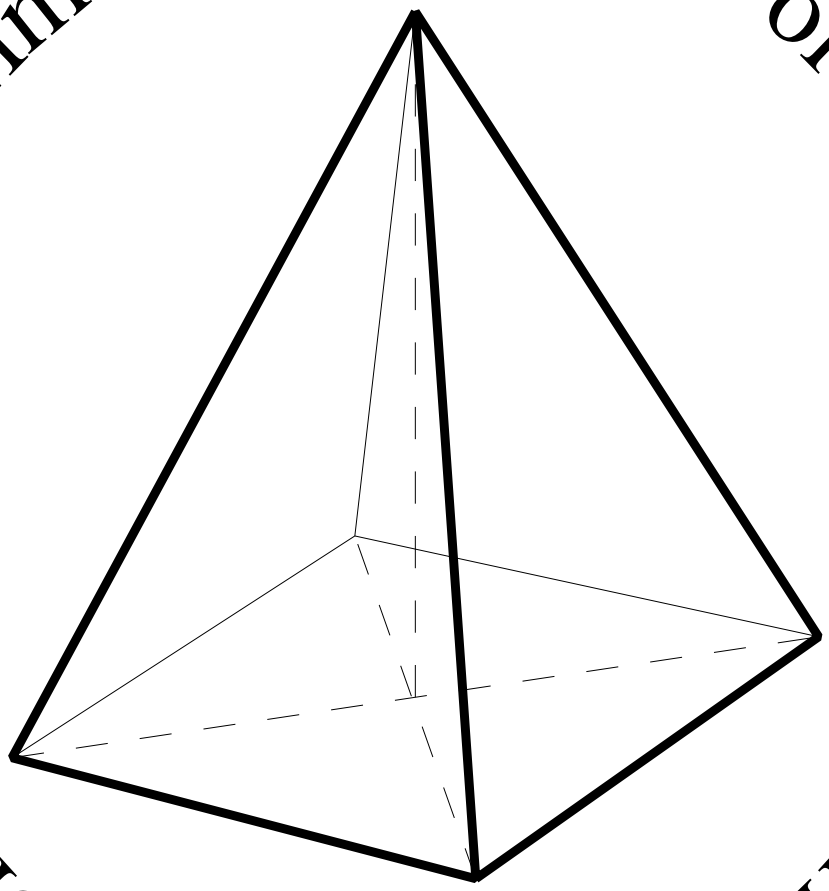
Perimeter, Area and Volume



Featuring Expanding the Brackets

Perimeter, Area & Volume

Lesson 1

Perimeter, Area & Volume : Year 9

1.1 Starter

Without using a calculator, work out each of the following products.
Look for the easy order.
For example, $2 \times 7 \times 5$ is harder if you work out 2×7 first, rather than 2×5.

(i) $2 \times 3 \times 5$

(ii) $4 \times 5 \times 4$

(iii) $2 \times 7 \times 7$

(iv) $3 \times 11 \times 10$

(v) $4 \times 20 \times 5$

(vi) $2 \times 3 \times 8$

(vii) $8 \times 4 \times 5$

(viii) $3 \times 30 \times 5$

(ix) $3 \times 4 \times 15$

(x) $6 \times 10 \times 20$

(xi) $2 \times 5 \times 14$

(xii) $3 \times 4 \times 7$

(xiii) $5 \times 5 \times 8$

(xiv) $2 \times 3 \times 40$

(xv) $10 \times 20 \times 20$

You are half way...
Turn over...

(xvi) $2 \times 2 \times 60$

(xvii) $2 \times 3 \times 20$

(xviii) $5 \times 6 \times 20$

(xix) $2 \times 11 \times 30$

(xx) $3 \times 3 \times 110$

(xxi) $5 \times 8 \times 20$

(xxii) $6 \times 6 \times 100$

(xxiii) $2 \times 6 \times 8$

(xxiv) $20 \times 30 \times 40$

(xxv) $3 \times 5 \times 8$

(xxvi) $4 \times 50 \times 50$

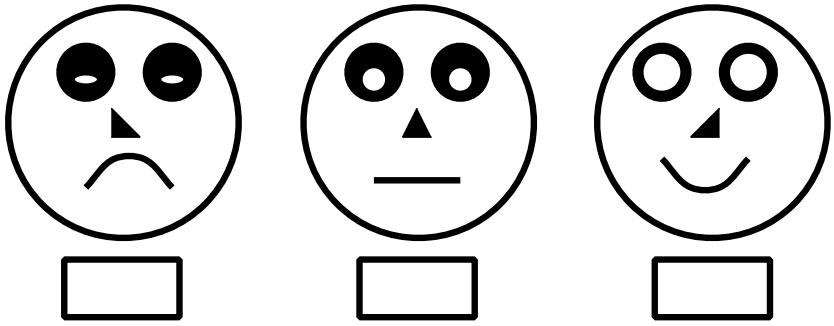
(xxvii) $2 \times 10 \times 20$

(xxviii) $2 \times 40 \times 70$

(xxix) $3 \times 30 \times 30$

(xxx) $4 \times 8 \times 50$

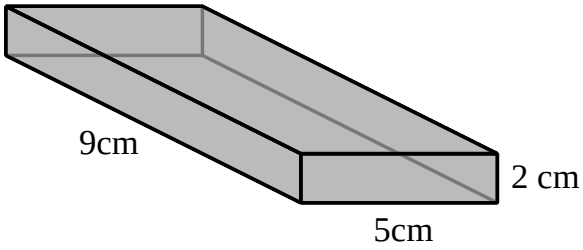
How did you do .... ?



1.2 In this lesson we will...

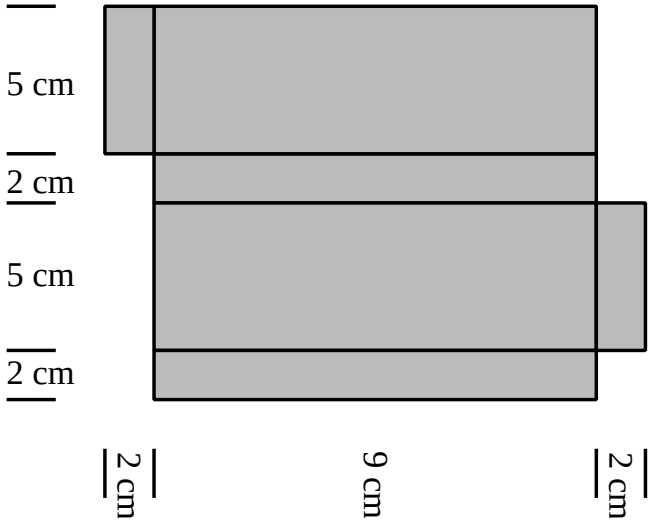
- Revise how to calculate the volume of a cuboid.
- Calculate the surface area of a cuboid.

1.3 Volume of a cuboid



$$Volume = length \times breadth \times height$$
$$= 9 \times 5 \times 2$$

1.4 Surface area of a cuboid



$$Surface\ Area = Sum\ of\ six\ rectangles$$

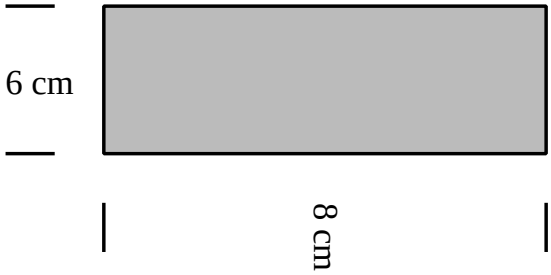
1.5 Exercise

Non Calculator

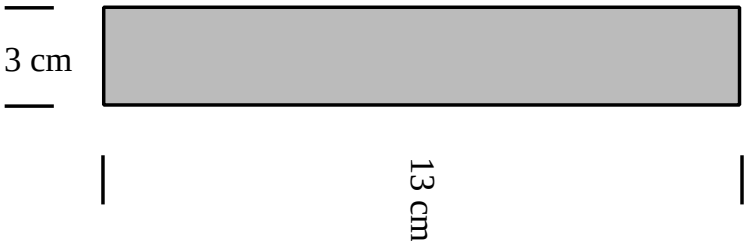
Question 1

Work out the area of these shapes;

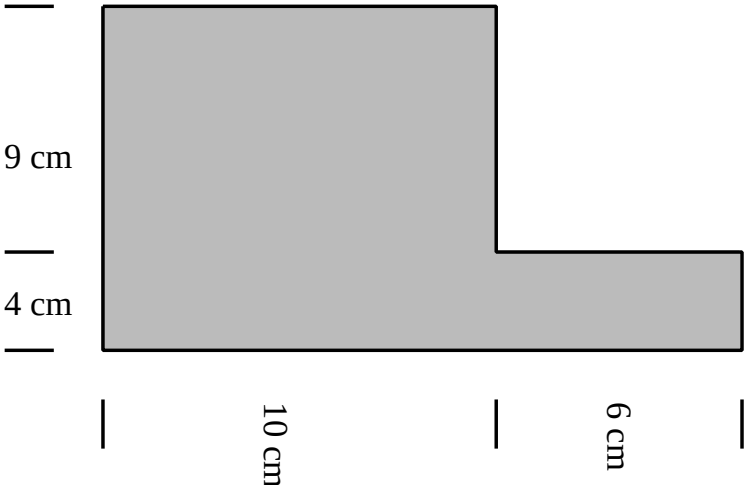
(i)



(ii)



(iii)



Question 2

Work out $50 \times 13 \times 2$ by doing 50×2 first then multiplying that answer by 13.

Question 3

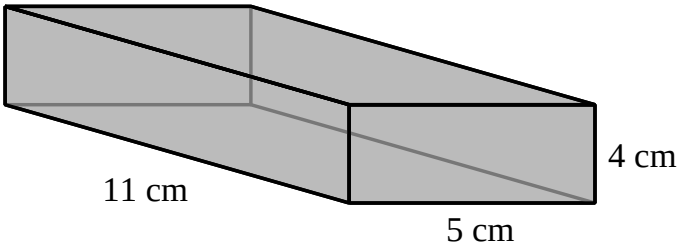
Work out;

(i) $8 \times 4 \times 5$ **(ii)** $5 \times 14 \times 2$

(iii) $25 \times 5 \times 2$ **(iv)** $7 \times 25 \times 4$

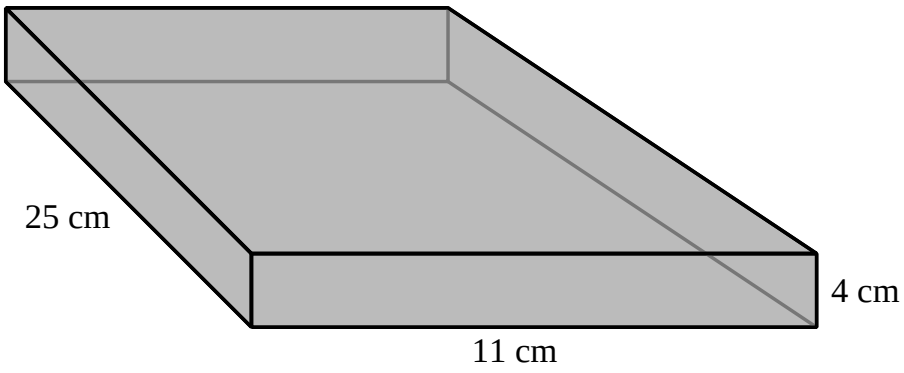
Question 4

What is the VOLUME of this cuboid ?

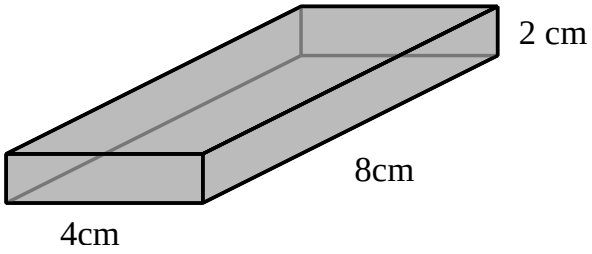


Question 5

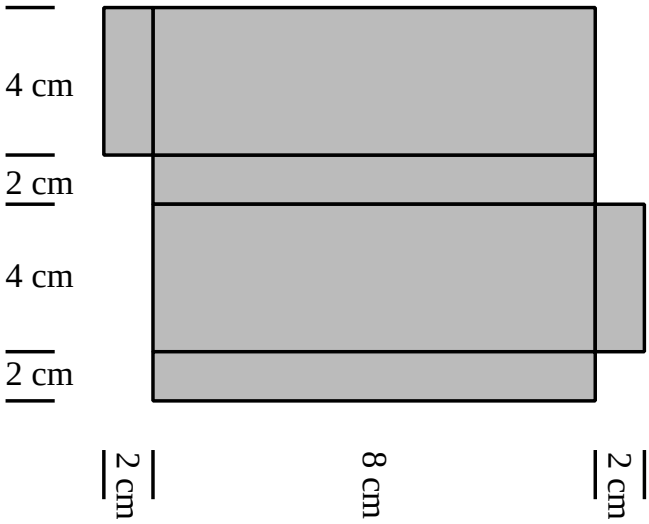
What is the VOLUME of this cuboid ?



Question 6



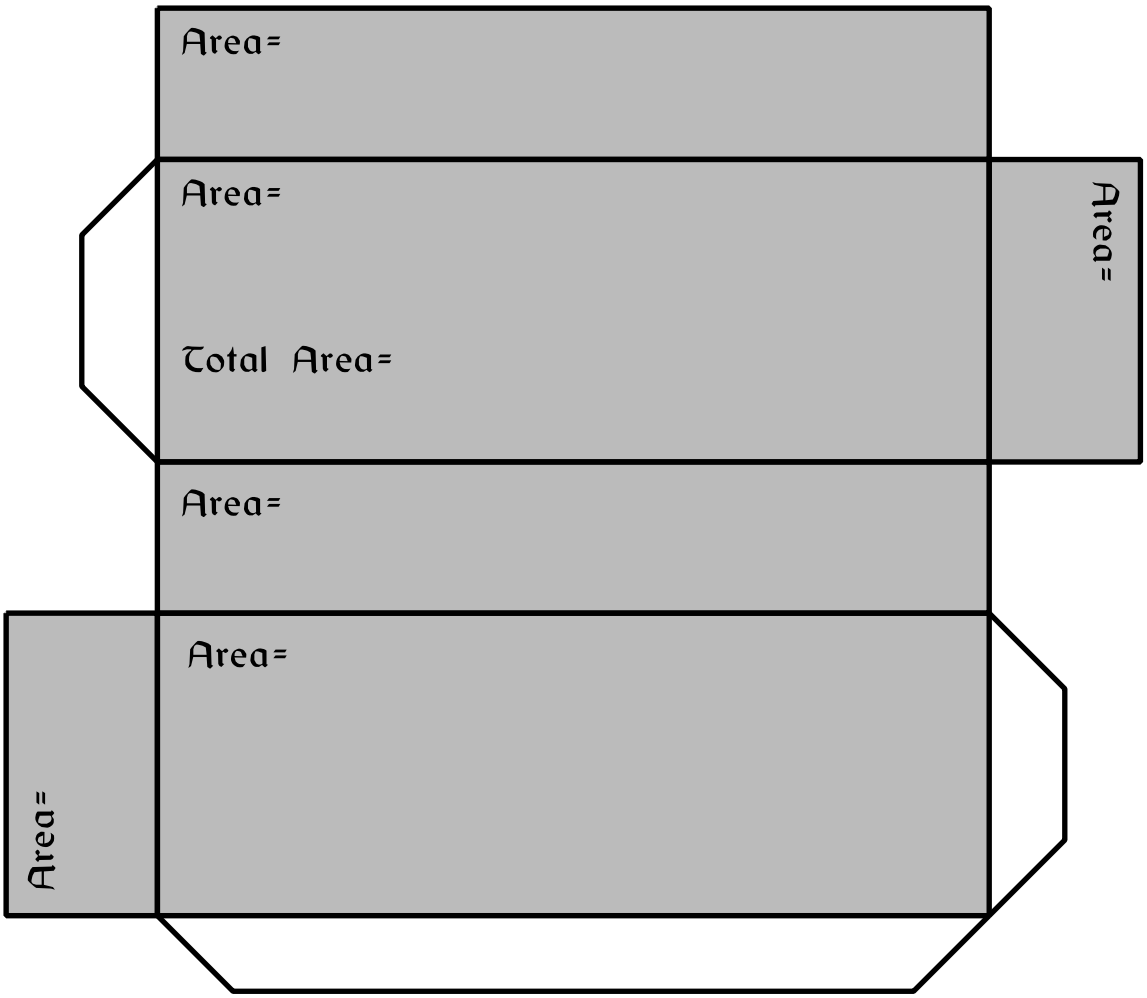
Work out the surface area of this cuboid using the net below to help.



Question 7

(i) For each rectangle in the net below,

- Use a ruler to measure the length and breadth.
- After "Area=" write down the calculation done and the answer.



(ii) Add together the six areas and write the answer by "Total Area=".

(iii) Cut out the shape, and make the cuboid.