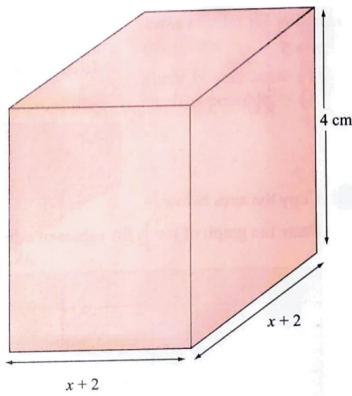


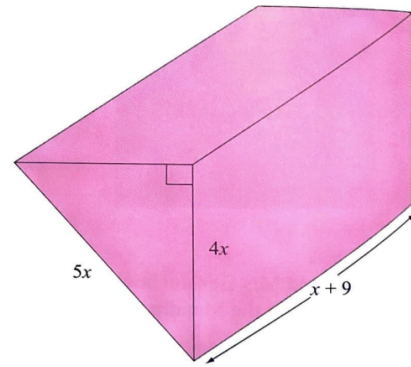
**After expanding double brackets**

1) The volume of this cuboid is  $192\text{cm}^3$ .

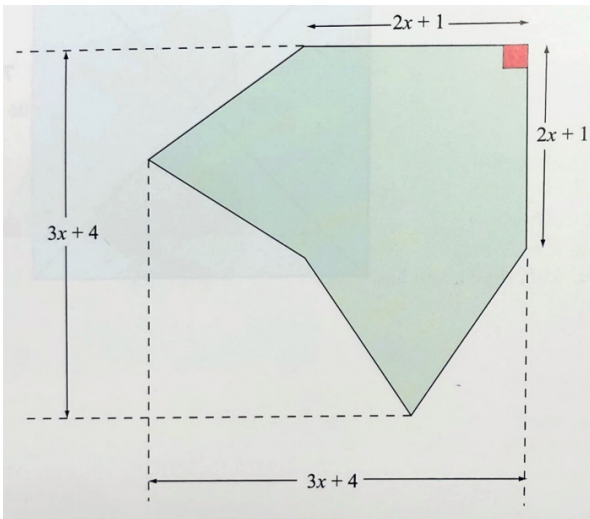
Show that  $x^2 + 4x = 44$



2) Find an expression for the volume of this triangular prism.



3) Show that the area of the green shape is  $6x^2 + 11x + 4$



**After expanding triple brackets**

4) For some integers  $a$ ,  $b$  and  $c$  the following is true:

$$a^2 + b^2 - 2c^2 = 2$$

- a) Show that when  $a = 2$ ,  $b = 4$  and  $c = 3$  the statement above is true
- b) Find another set of  $a$ ,  $b$  and  $c$  that make it true. How are these sets of numbers linked?
- c) Can you prove that all integers in this pattern will always make this statement true?

**After factorising**

5) In a maths exam with  $N$  questions, you score  $m$  marks for a correct answer to each of the first  $q$  questions and  $m + 2$  marks for a correct answer to each of the remaining questions.

What is the maximum possible score?

$(m + 2)N - 2q$        $Nm$        $mq + (m + 2)q$        $N(m + 1)$        $Nm + q(m + 2)$

6) It takes  $(6x - 9)$  builders  $(2y - 4)$  days to build a wall.

It would have taken  $(8x - 12)$  builders  $(y + 3)$  days to build the same wall.

Find  $y$

## Answers

2)  $6x^3 + 54x^2$

4a)  $2^2 + 4^2 - 2 \times 3^2 = 2$

b) Any in the form  $(n, n+2, n+1)$

c) expand and prove

5)  $(m + 2)N - 2q$

6) 12