Maths Revision Booklet
for CCEA GCSE 2-tier specification
M4

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Name:

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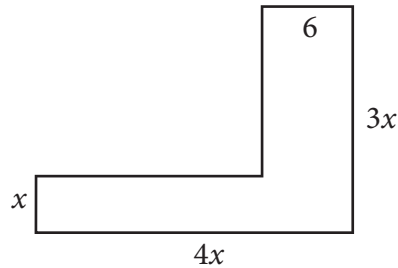You are permitted to use a calculator in this examination.

Dedicated to the 5 best grandchildren in the world Cadence, Lily,
Willow, Quinn and Rory and the best marathon runner ever, David.

Revision Exercise 1

1. Look at the shape below. All measurements are in centimetres.

(a) Show that its area is given by $4x^2 + 12x$

(b) Find the value of x when the area is 40 cm^2

Answer $x =$ _____

2. **(a)** Find the equation of the straight line L which passes through the points $(3, -4)$ and $(1, -8)$.
   (Hint: You have to learn the coordinate geometry formulae. The formulae are not given in the exam.)

Answer _____

(b) Find the equation of the straight line which passes through $(-2, 5)$ parallel to L.

Answer _____

(c) Find the equation of the straight line which passes through $(-2, 5)$ perpendicular to L.
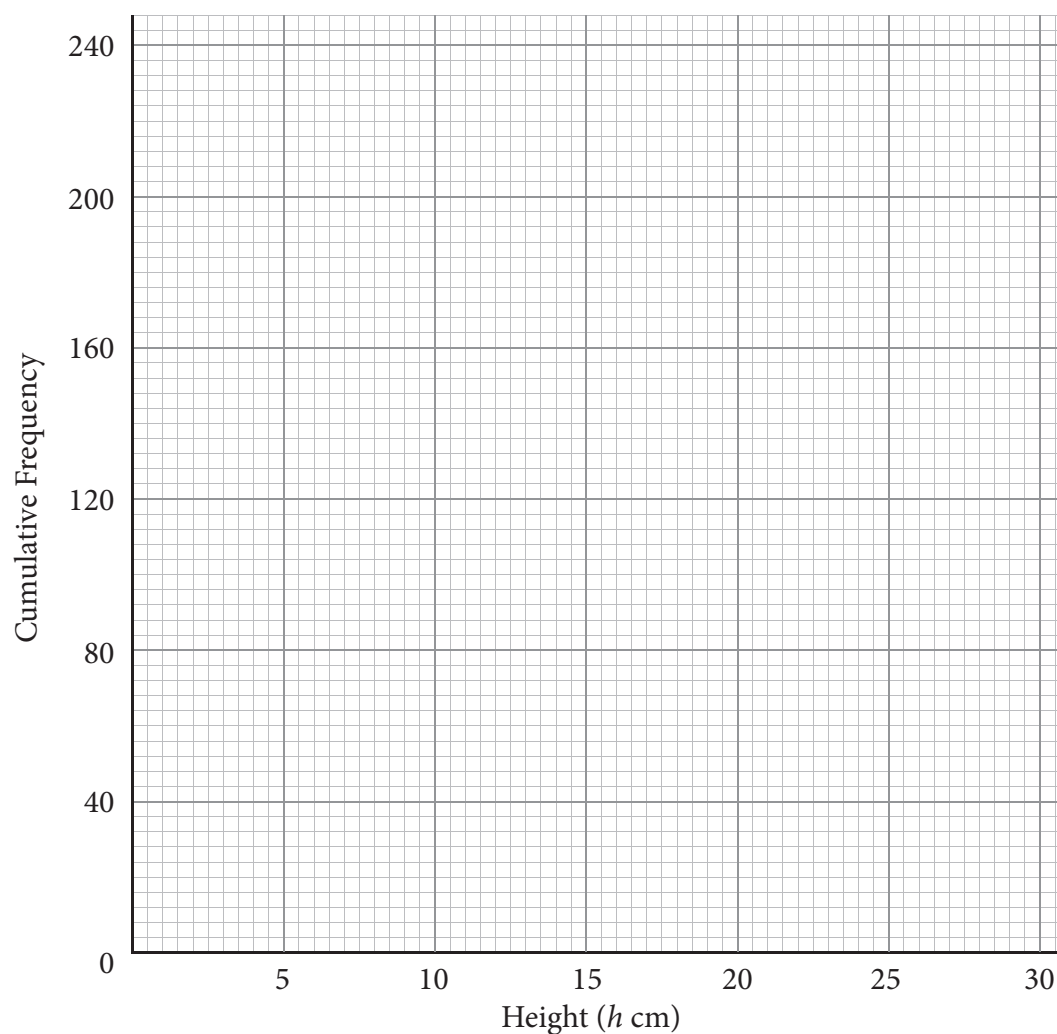
Answer _____

3. The table below shows the heights of 240 objects to the nearest centimetre.

Height (*h* cm)	1–4	5–8	9–12	13–16	17–20	21–24	25–28
Frequency	10	32	44	78	40	28	8

(a) Complete the cumulative frequency table below.

Height (less than) cm	0.5	4.5	8.5	12.5	16.5	20.5	24.5	28.5
Cumulative Frequency	0	10	42					240

(b) Draw the cumulative frequency curve on the grid below.

(c) Use your cumulative frequency curve to estimate:
  (i) the median,

  Answer _____ cm

  (ii) the inter-quartile range,
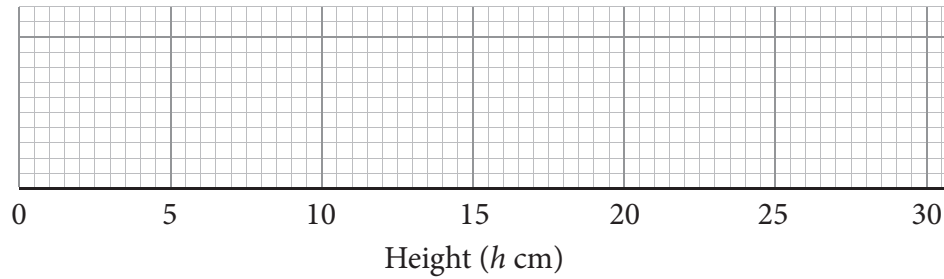
  Answer _____ cm

  (iii) how many heights are between 7 cm and 22 cm.

  Answer _____

(d) The tallest 15% are discarded. Find the tallest height kept.

Answer _____ cm

(e) Draw a box plot of the heights on the grid below.

Height (h cm)

4. Factorise completely:
   (a) $8xn + 4xc - 6n - 3c$

Answer _____

   (b) $q^2 - 3q - 40$

Answer _____

   (c) $7(f + 3) - 4(f + 3)^2$

Answer _____

   (d) $3t^2 - 48v^2$

Answer _____

5. Solve:
   (a) $6h^2 + h = 0$

Answer _____

   (b) $t^2 - 9t + 18 = 0$

Answer _____