

First name	
Last name	
School	

CE AT 13+

FOUNDATION MATHEMATICS

ISEB

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Examinations Board

Specimen Calculator Paper

Date

Time allowed: 60 minutes

Instructions

Answer as many questions as you can.

You must show all your working, or you may receive no marks.

You are encouraged to cross out mistakes neatly, not erase them.

Answers given as fractions should be reduced to their lowest terms.

Answers should include correct units where necessary.

A row of dots shows where to write an answer.

Grey boxes are for your working, but extra working can be done anywhere on the paper.

If there is no row of dots, you should double underline your answer with your working in a grey box.

Write no more than 6 digits from your calculator as an answer.

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1. Calculate (a) $23.7 \div 0.3$ (b) 6.3^2

$= \dots\dots\dots$ $= \dots\dots\dots$

[2]

2. (a) Write the first 5
- (i) multiples of 7 $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$
- (ii) square numbers $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$
- (iii) even numbers $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$, $\dots\dots\dots$

[6]

(b) Write all the factors of 20 $\dots\dots\dots$

[2]

(c) Circle all the **prime** numbers below.

1	2	3	4	5	
	6	7	8	9	10

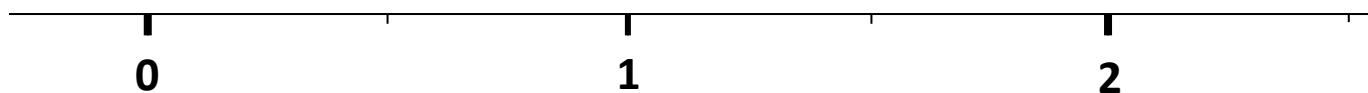
[2]

3. Complete these.

(a) $3.84 + \dots\dots\dots = 46.44$ (b) $\dots\dots\dots \times 3.5 = 32.55$

[2]

4. Draw an arrow pointing to $\frac{7}{8}$ on the number line.



[2]

5. Complete these.

(a) $6\text{ kg} = \dots\dots\dots \text{ g}$

(b) $450\text{ cm} = \dots\dots\dots \text{ m}$

(c) $\text{£}7 = \dots\dots\dots \text{ p}$

(d) $1\text{ hour} = \dots\dots\dots \text{ minutes}$

[4]

6. Circle the correct answers.

(a) The mass of a monkey is

30 g	30 km	30 m²	30 kg
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(b) The length of a classroom is

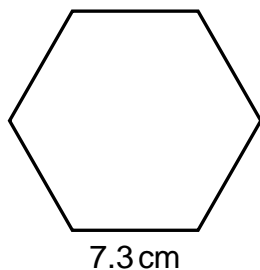
120 m	12 cm	12 m	120 km
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(c) The area of a carpet is

35 m	35 ml	35 m³	35 m²
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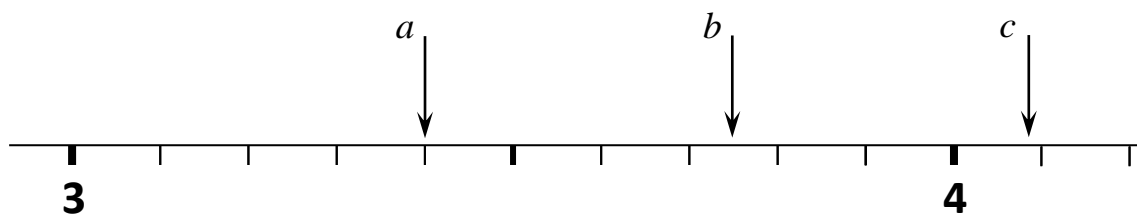
[3]

7. Find the **perimeter** of this regular hexagon.



[3]

8. Look at the number line.



What number does each arrow point to?

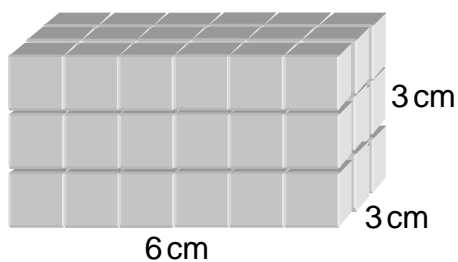
$a = \dots\dots\dots$, $b = \dots\dots\dots$, $c = \dots\dots\dots$

[3]

9. Work out 12% of £3500

[3]

10. Work out the **volume** of this cuboid.



[3]

11. Simplify

(a) $a \times a$

=

(b) $a + a$

=

(c) $c \times d$

=

(d) $7a + 2b + 3a - 2b$

=

(e) $5m + 4m$

=

(f) $5m \times 4m$

=

[6]

12. Given that $s = 5$ and $t = 3$, find the value of

(a) $2s + t$

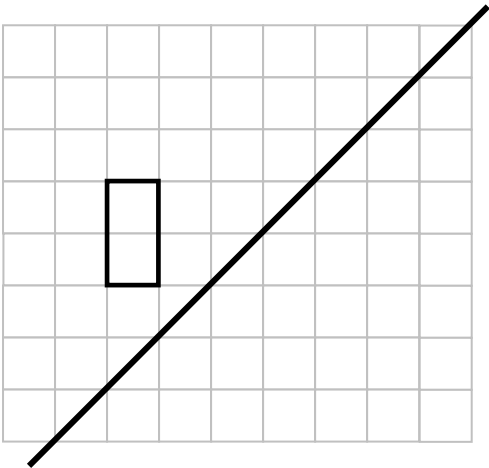
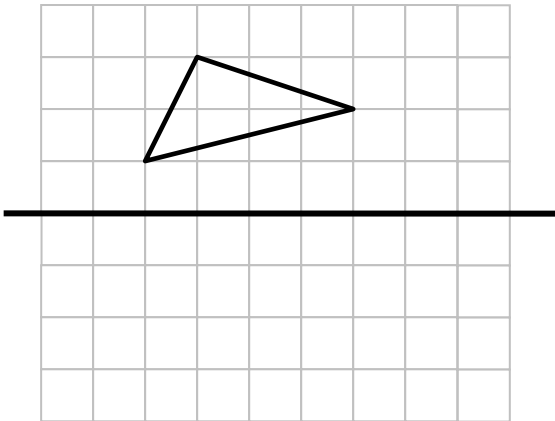
(b) $t^2 - s$

(c) $\frac{s + t}{2}$

(d) st

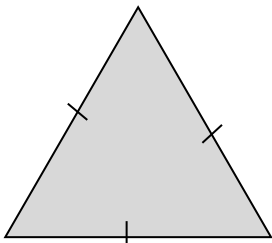
[7]

13. Complete the symmetries by reflection in the lines.

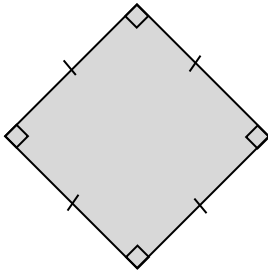


[4]

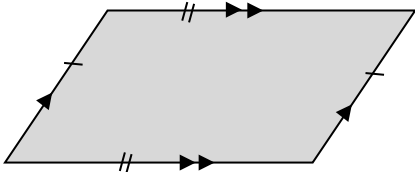
14. Name these shapes.



.....



.....



.....

[4]

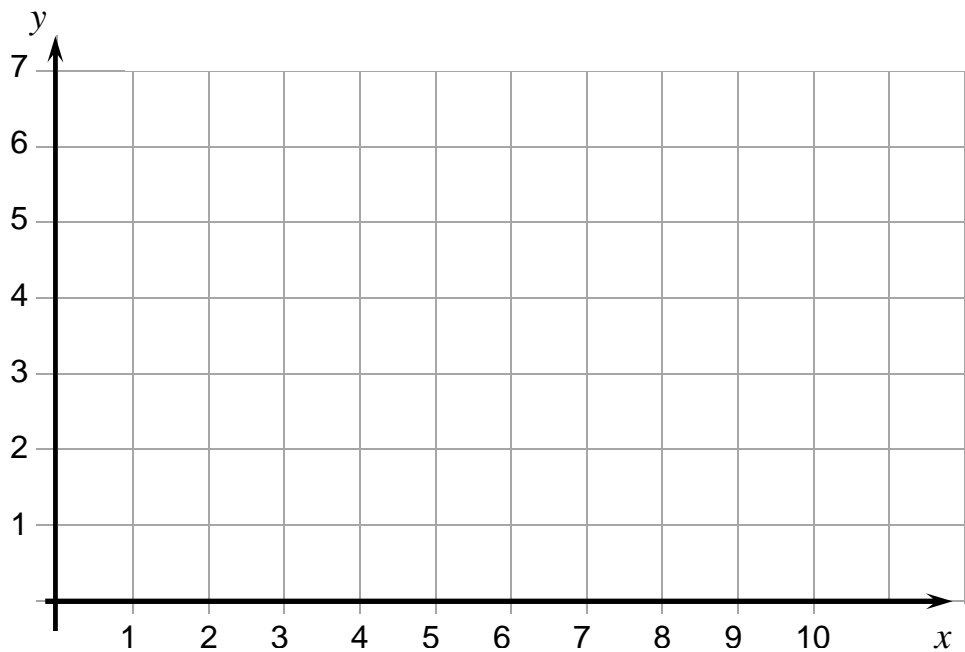
15. Work out the total value of these coins in pounds.



Answer:

[3]

16.



On the grid above,

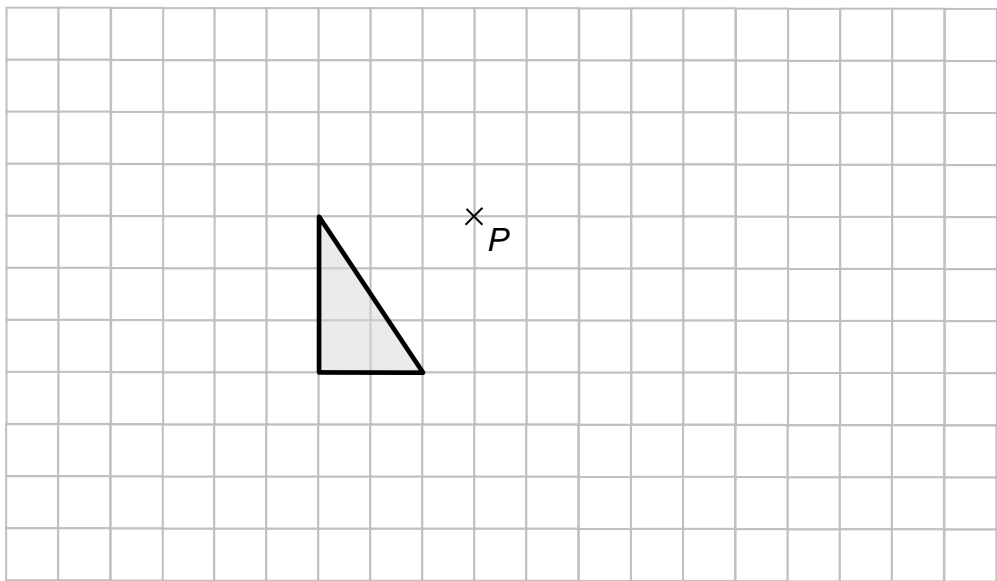
- (a) plot and label the points **A**(4, 6) , **B**(0, 3) and **C**(4, 0).

[3]

- (b) plot a fourth point, **D**, to make **ABCD** a rhombus.

[2]

17. On the grid below, rotate the triangle 90° clockwise about the point *P*.



[3]

18. *Answers given as fractions should be in lowest terms.*

Alisha has a bag containing **6 red** balls and **9 blue** balls.

She takes one ball out at random.

What is the probability it is **red**?



[3]

19. Tilly drives at **42 miles per hour** for **3 hours**.

How far does she go?



[3]

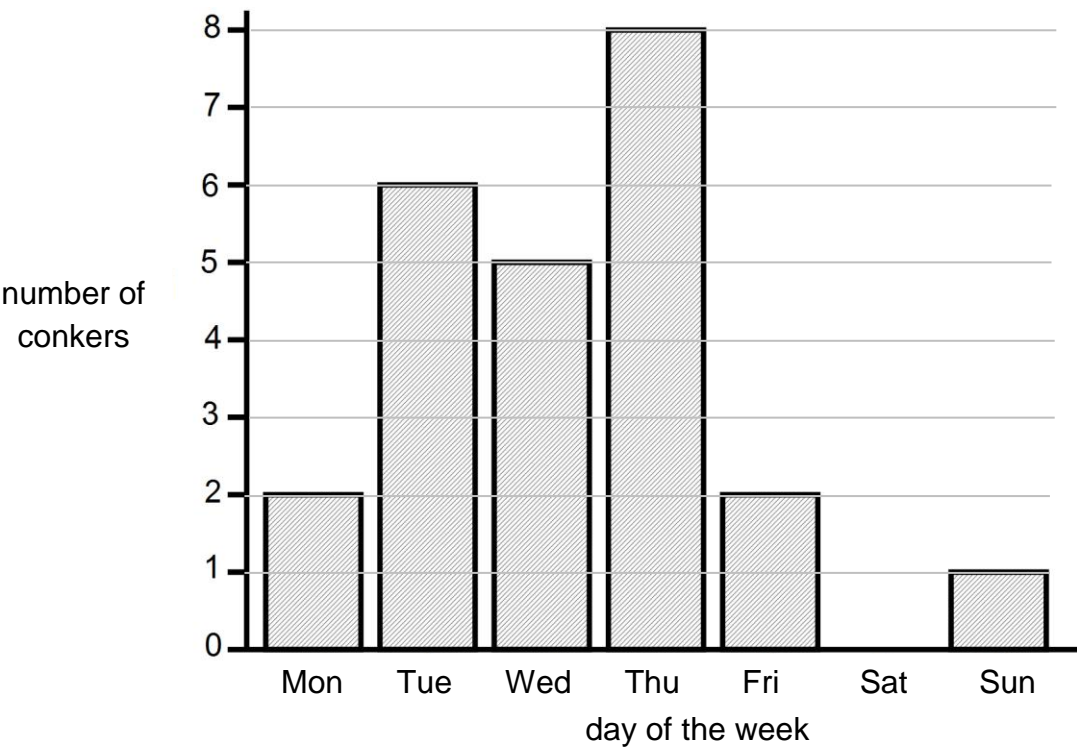
20. Write brackets in these expressions to make them correct.

(a) $10 - 2 + 3 = 5$

(b) $3 + 2 \times 3 + 1 = 20$

[2]

21. This graph shows the number of conkers Ralf collected on each day of the week.



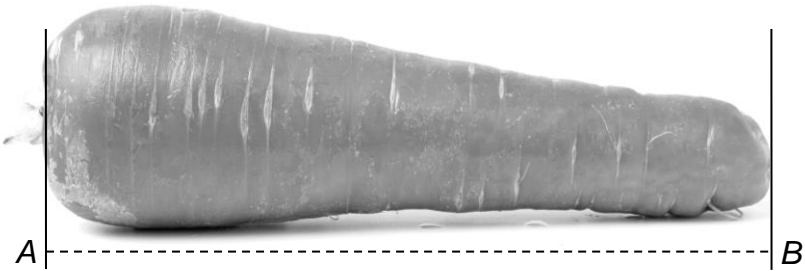
(a) How many conkers did Ralf collect on Wednesday? Answer:

[1]

(b) How many conkers did he collect in the whole week?

[2]

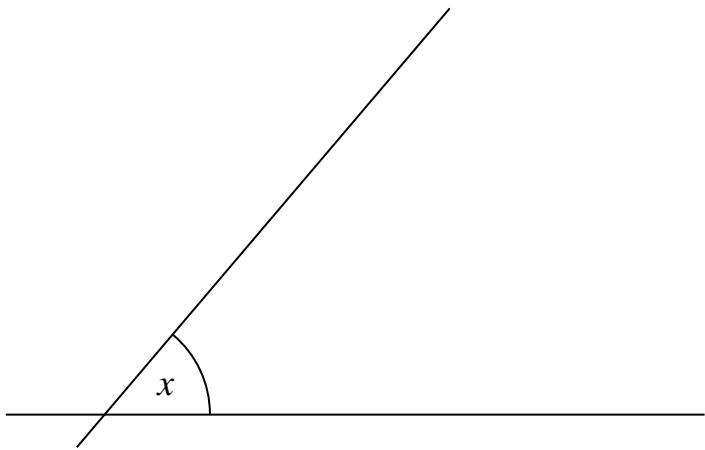
22. Use your ruler to measure the length of the carrot from *A* to *B*.



Answer in centimetres: $AB = \dots\dots\dots$ cm [2]

Answer in millimetres: $AB = \dots\dots\dots$ mm [1]

23. (a) Use your protractor to measure the angle x



Answer: $x = \dots\dots\dots^\circ$

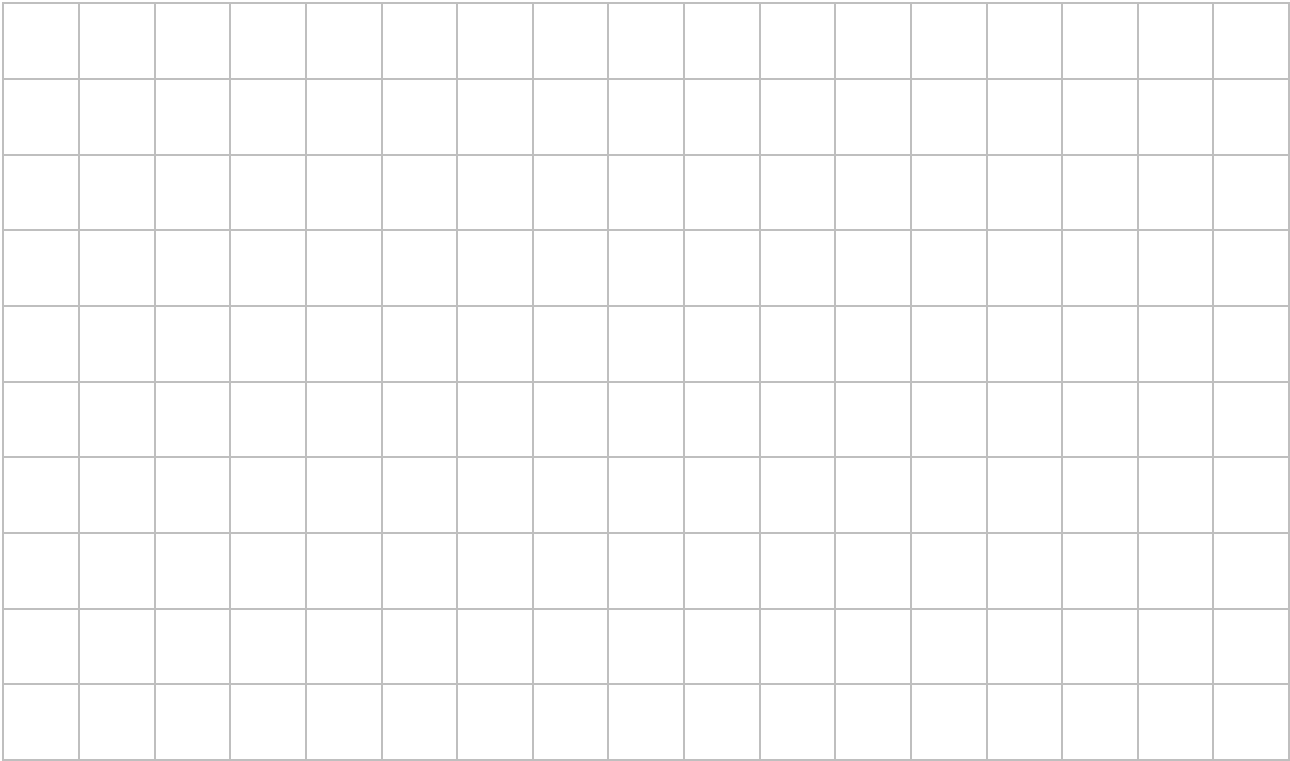
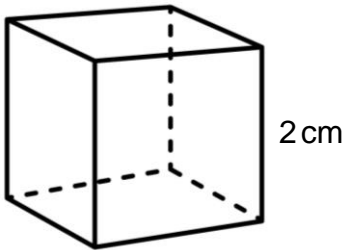
[2]

(b) What type of angle is x ?
Circle the correct answer.

obtuse	acute	perpendicular	parallel	reflex
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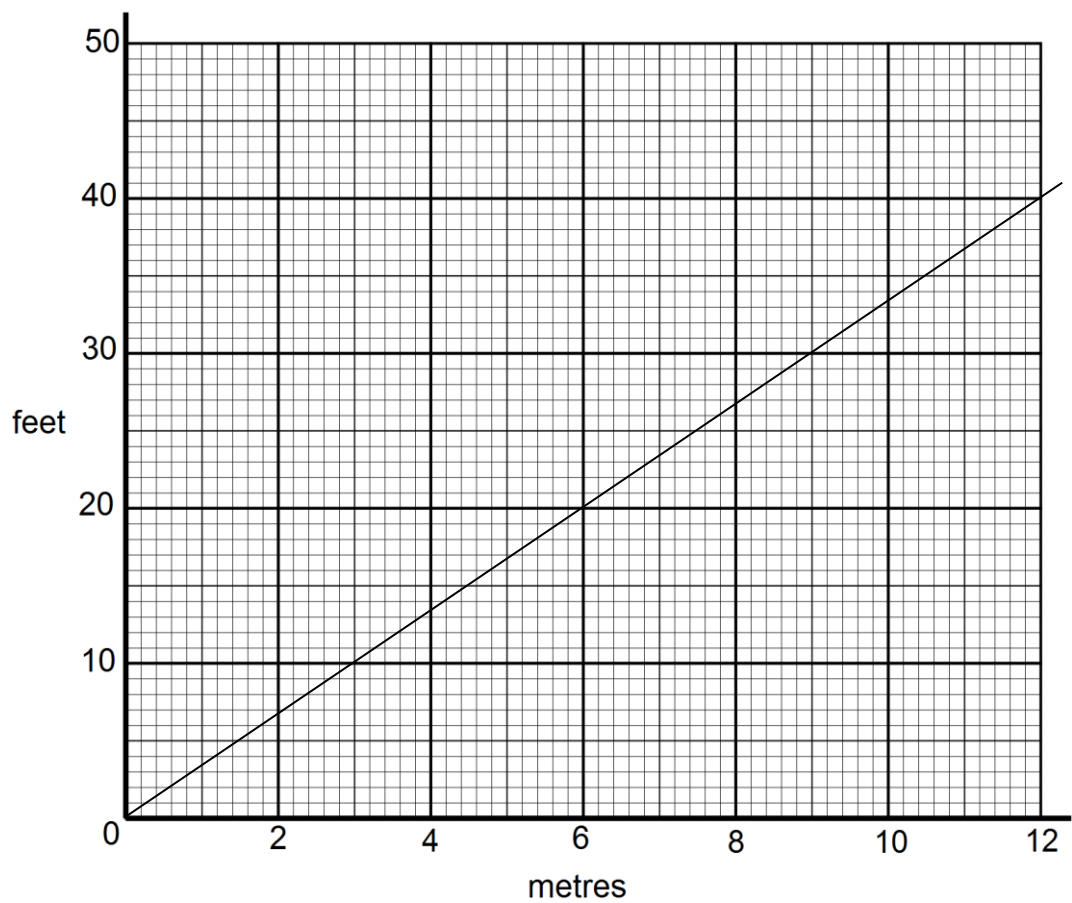
[1]

24. Each edge of this cube is 2 cm.
Draw the **net** of the cube on the grid below.



[4]

25. The graph can be used to convert between metres and feet.



Showing clearly where you take your readings,

(a) convert 8 metres into feet

Answer: feet

(b) convert 10 feet into metres

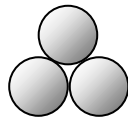
Answer: m

26. Look at the sequence of patterns made of balls.

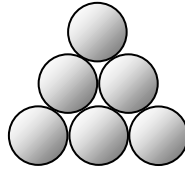
How many balls are there in pattern 6?



pattern 1



pattern 2

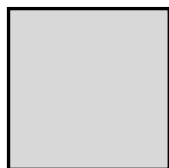


pattern 3

[4]

27. If the area of the small square below is 25 cm^2 , what is the area of the big square?

The big square is twice the height of the small square.



[4]

(Total: 100 marks)