

First name	
Last name	
School	

CE AT 13+

MATHEMATICS



Foundation Calculator Paper

Specimen Paper

Date

Time allowed: 60 minutes

Instructions

Answer as many questions as you can.

Clear working to long-answer questions should be written in the grey boxes, along with any final results, which should be double underlined.

For long-answer questions, marks will be awarded for working.

Answers should include correct units, where necessary.

Answers given as fractions should be reduced to lowest terms and written as mixed numbers, where appropriate.

Diagrams are **not** drawn accurately unless otherwise specified.

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

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

Information

You may use a simple scientific calculator with algebraic logic, π and square root buttons.

Calculators with more advanced functions are not permitted.

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

= =

[2]

2. (a) Write the first 5
- (i) multiples of 7 , , , ,
- (ii) square numbers , , , ,
- (iii) even numbers , , , ,
- [6]

(b) Write all the factors of 20

[2]

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

1 2 3 4 5

6 7 8 9 10

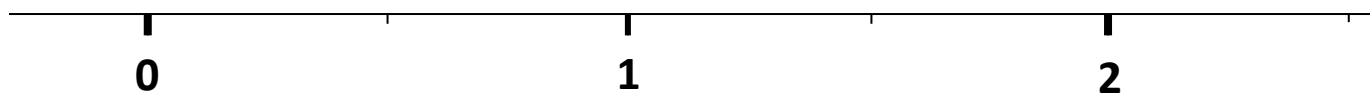
[2]

3. Complete these.

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

[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

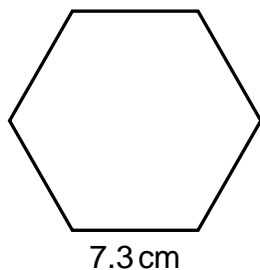
120 m	12 cm	12 m	120 km
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(c) The area of a carpet is

35 m	35 ml	35 m³	35 m²
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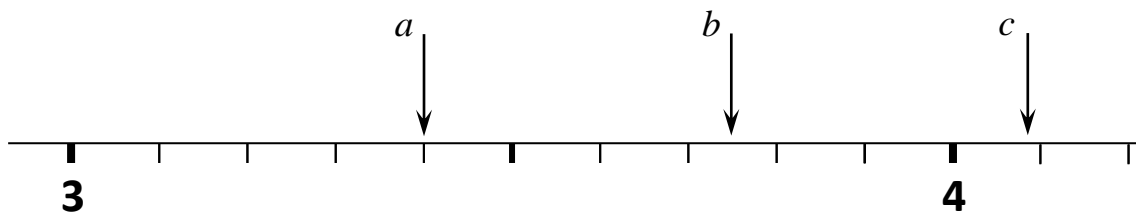
[3]

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



[3]

8. Look at the number line.



What number does each arrow point to?

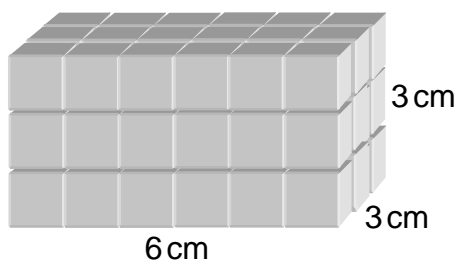
$a = \dots\dots\dots$, $b = \dots\dots\dots$, $c = \dots\dots\dots$

[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) $2s + t$

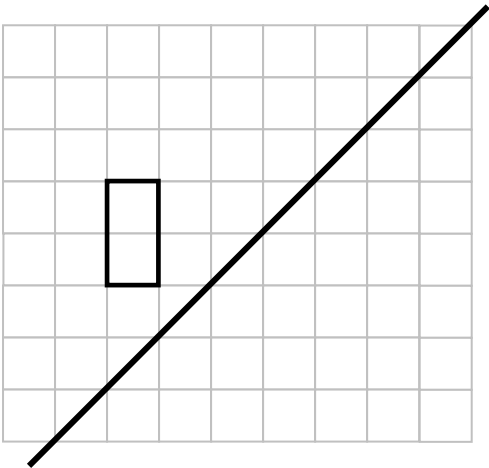
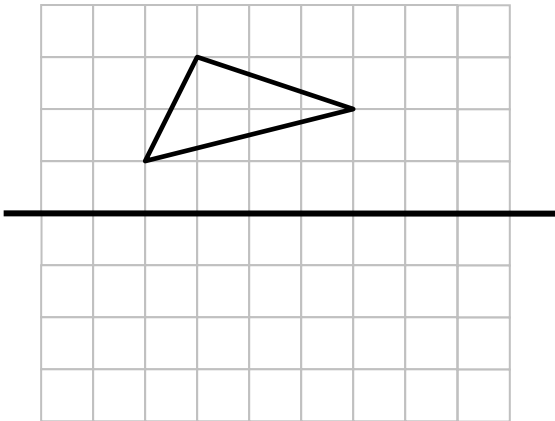
(b) $t^2 - s$

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

(d) st

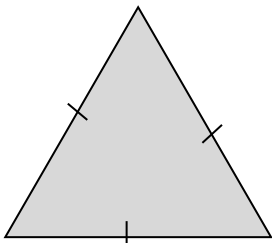
[7]

13. Complete the symmetries by reflection in the lines.

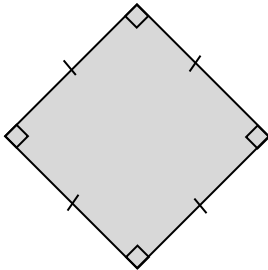


[4]

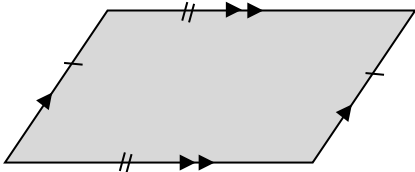
14. Name these shapes.



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.....



.....

[4]

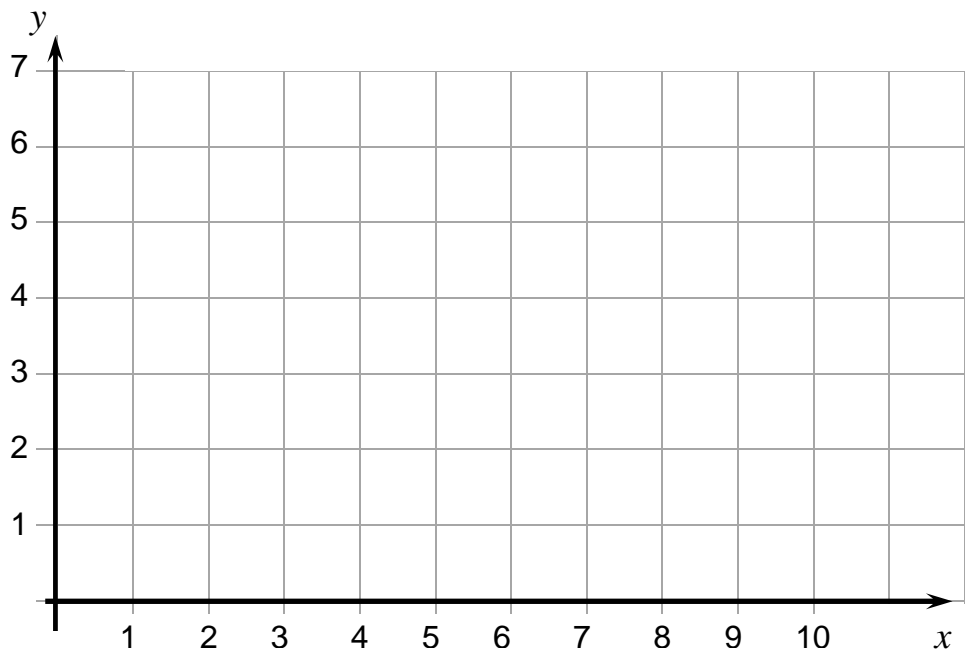
15. Work out the total value of these coins in pounds.



Answer:

[3]

16.



On the grid above,

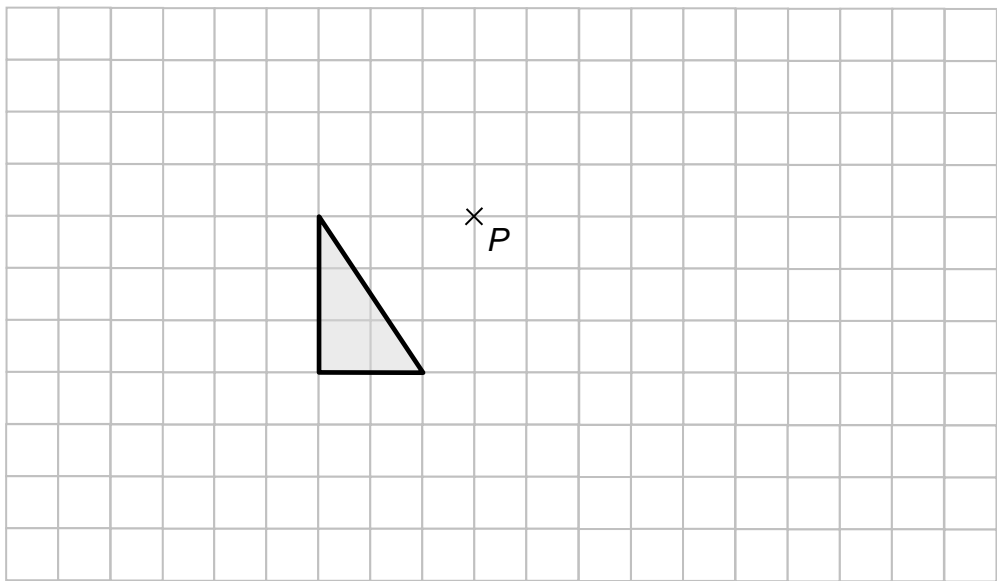
- (a) plot and label the points **A**(4, 6) , **B**(0, 3) and **C**(4, 0).

[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]

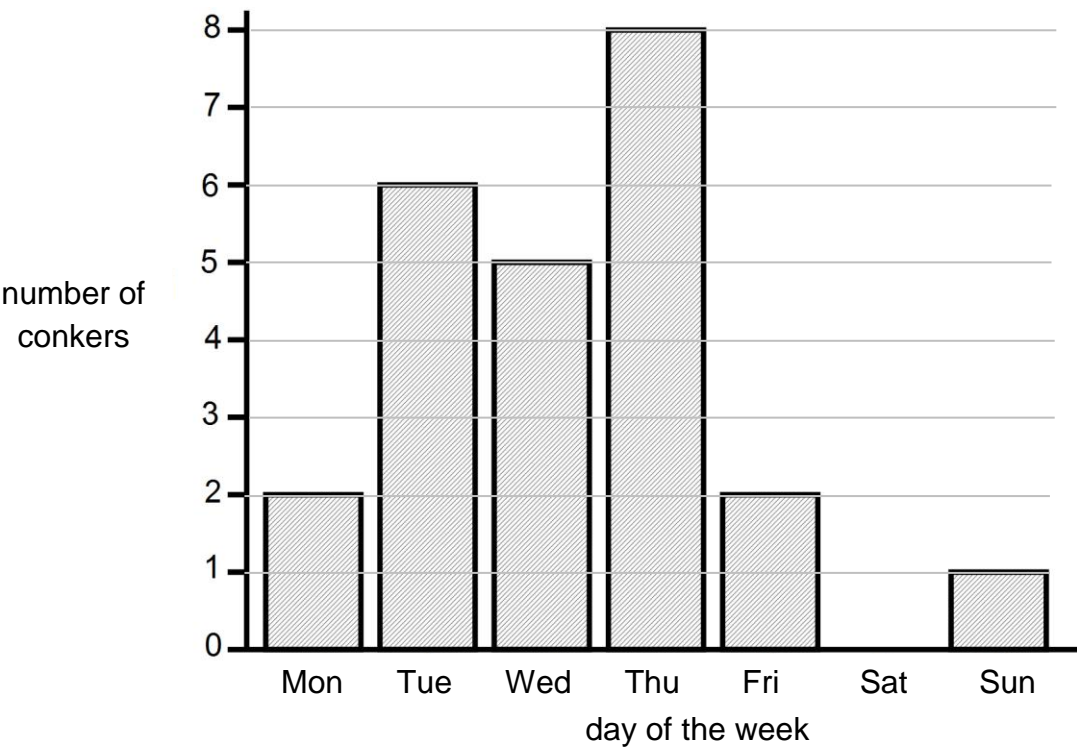
20. Write brackets in these expressions to make them correct.

(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.



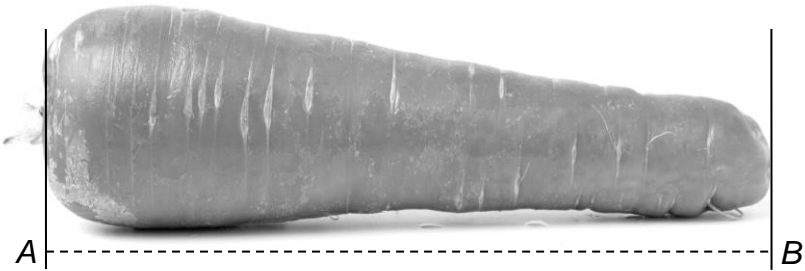
(a) How many conkers did Ralf collect on Wednesday? Answer:

[1]

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

[2]

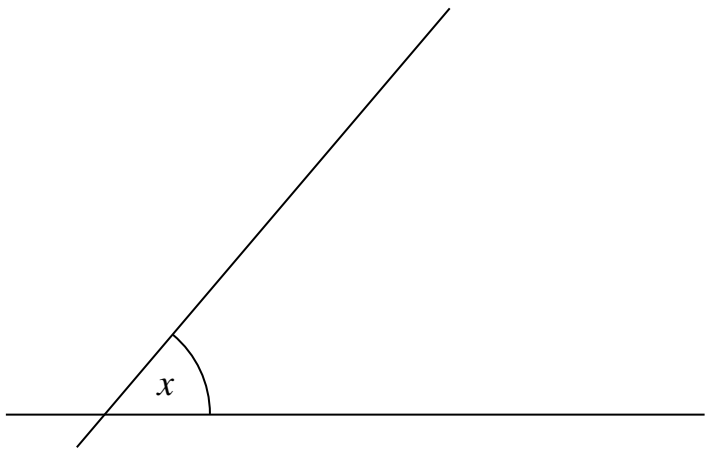
22. Use your ruler to measure the length of the carrot from *A* to *B*.



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

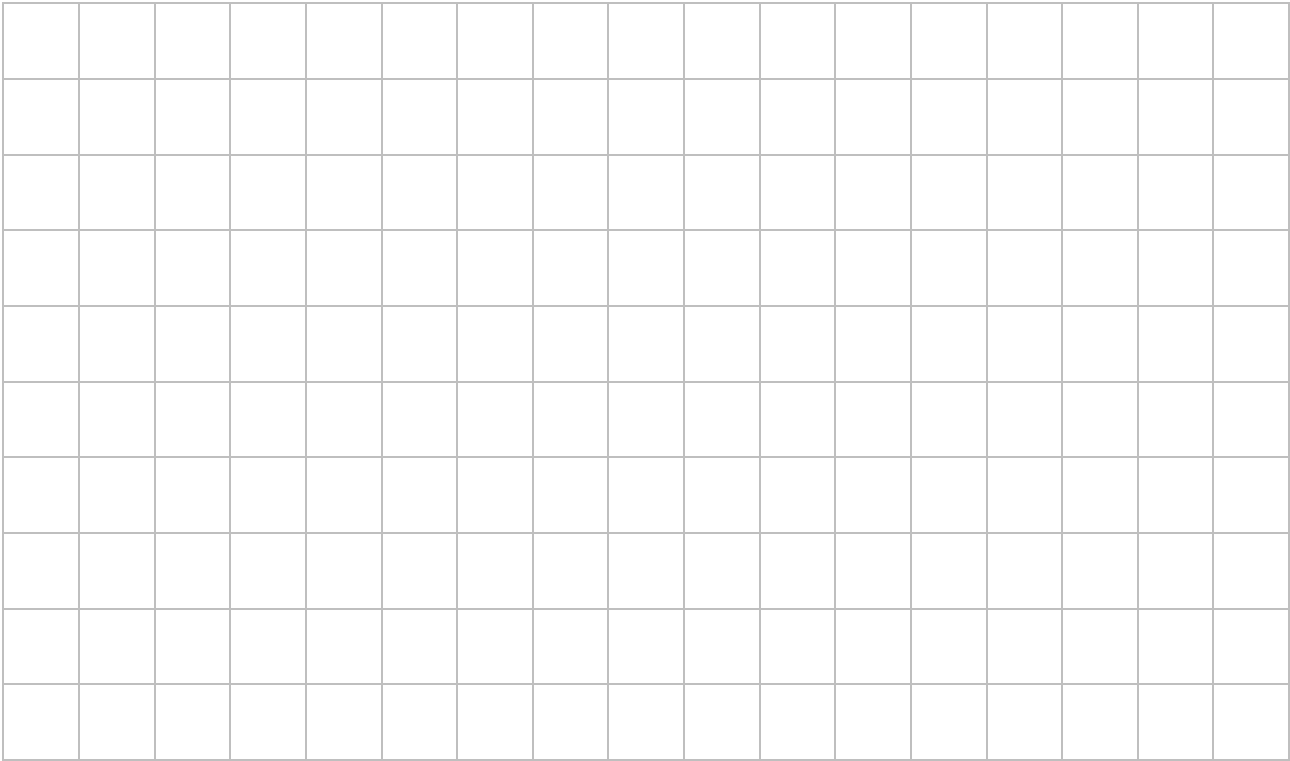
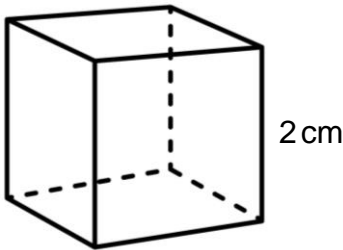
[2]

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

obtuse	acute	perpendicular	parallel	reflex
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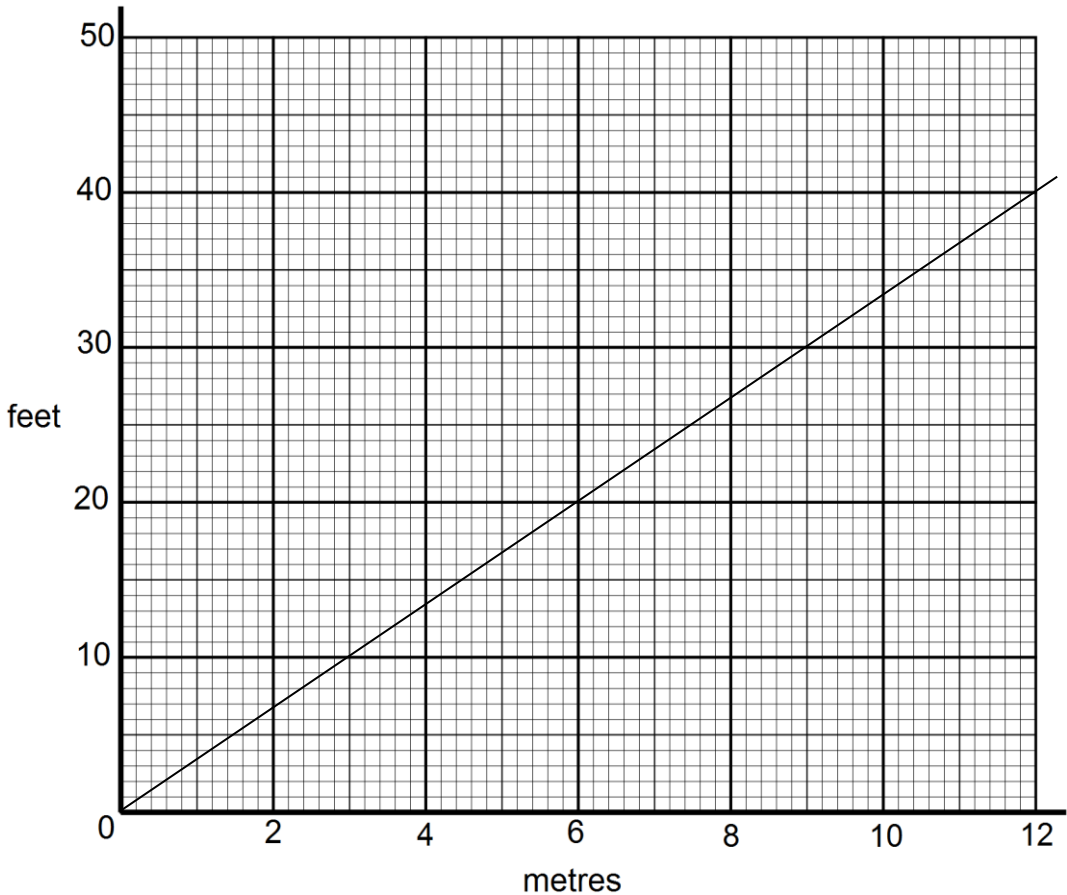
[1]

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

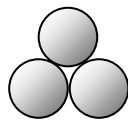
Answer: m

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

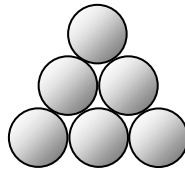
How many balls are there in pattern 6?



pattern 1



pattern 2

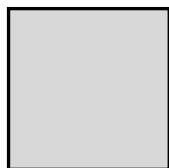


pattern 3

[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)