Name	Date started	Target end date

REVISE
.wales

F2.14 — 2-D & 3-D shape vocabulary & properties

Spec 3.1.1, 3.1.2, 3.1.3 — Unit 2 (no calculator)

Foundation 2-D and 3-D shape vocabulary and properties: naming polygons by their number of sides, classifying triangles and quadrilaterals by their angle and side properties, and describing 3-D solids by their faces, edges and vertices (prisms, pyramids, spheres, cylinders, cones). Sourced from legacy WJEC GCSE Mathematics-Numeracy Foundation papers (3300U10/U20) and accessible content from Intermediate papers (3300U30/U40), organised for revision under the 2025 spec.

2025 SPECIFICATION

Estimated time for entire question pack: ~36 minutes

*Derived from the GCSE Higher pace of **~1.5 min/mark** (24 marks across 16 questions).*

*You are advised to **not** attempt to complete all of this in one sitting.*

ABOUT THIS QUESTION PACK

This is a **focused single-topic practice pack**, not a single mock paper. Questions are organised against the 2025 specification.

Questions are ordered chronologically by sitting, with custom-written and SAM questions at the end.

INSTRUCTIONS

Use black ink or black ball-point pen. Show all working — method marks are awarded for clear setup.

*A calculator is **not** permitted on any question in this pack (Unit 2 is the non-calculator paper).*

2-D & 3-D shape vocabulary & properties — what the new spec asks

WJEC GCSE Mathematics (first teaching 2025) · Unit 2: non-calculator.

Polygon vocabulary 3.1.1

- Name polygons by their number of sides up to decagon.
- Distinguish regular from irregular polygons.
- Identify lines of symmetry and rotational symmetry order.

Triangles and quadrilaterals 3.1.2

- Classify triangles by sides and angles.
- Classify quadrilaterals by parallel sides and equal sides/angles.
- Recall key properties of square, rectangle, rhombus, parallelogram, trapezium, kite.

3-D solids 3.1.3

- Use the terms face, edge and vertex correctly.
- Count faces, edges and vertices for cubes, cuboids, prisms and pyramids.
- Identify cylinder, cone and sphere from their properties.

Exam strategy 3.1

- Non-calculator — quote the property by name.
- Match the demand: name, describe, or count?
- Sketch the solid if vocabulary is tricky to recall.

Crib sheet »

2-D & 3-D shape vocabulary & properties in one page

Quick-reference notes — revisit before each question. Don’t use during the questions.

Naming polygons

3 sides triangle · 4 quadrilateral · 5 pentagon · 6 hexagon · 7 heptagon · 8 octagon · 10 decagon.

Triangle types

Equilateral: 3 equal sides, 3 equal angles (60°).

Isosceles: 2 equal sides & angles.

Scalene: all different. **Right-angled**: one 90° angle.

Quadrilateral types

Square · rectangle · parallelogram · rhombus · trapezium · kite. Differ by which sides/angles are equal and which are parallel.

3-D vocabulary

Face: a flat surface. **Edge**: where two faces meet. **Vertex**: a corner.

Cube: 6 faces, 12 edges, 8 vertices.

Prism vs pyramid

Prism: same cross-section all the way through (cuboid, triangular prism, cylinder).

Pyramid: faces taper to a single vertex.

Common traps

- Calling a rhombus a square — rhombus angles aren’t 90°.
- Counting curved surfaces as edges.
- Confusing ‘vertex’ with ‘face’.

Examiner only

10. *In this question, you will be assessed on the quality of your organisation, communication and accuracy in writing.*

ABCF is a rectangle.
CDEF is a trapezium.
BD is a straight line.

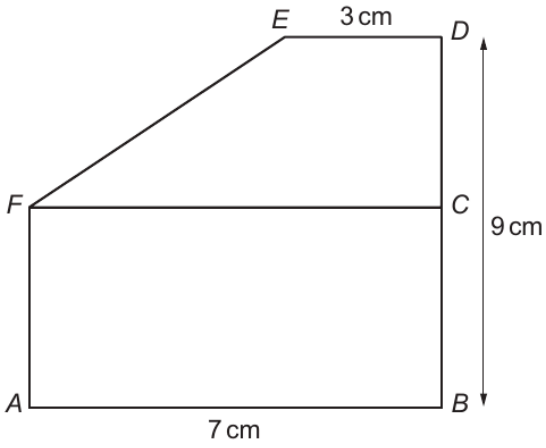


Diagram not drawn to scale

AB = 7 cm, *BD* = 9 cm and *DE* = 3 cm.

The perimeter of rectangle *ABCF* is 24 cm.

Calculate the **area** of the trapezium *CDEF*.
You must show all your working. [4 + 2 OCW]

Examiner only

1. Fill in the boxes below to make each calculation correct. [4]

£3.26	+	89p	=	£ .....
78p	+	£	=	£5.45
7	×	46p	=	£ .....
.....	×	25p	=	£9.75

3300U201
03

2. *(a)* Write 2453 correct to the nearest 10. [1]

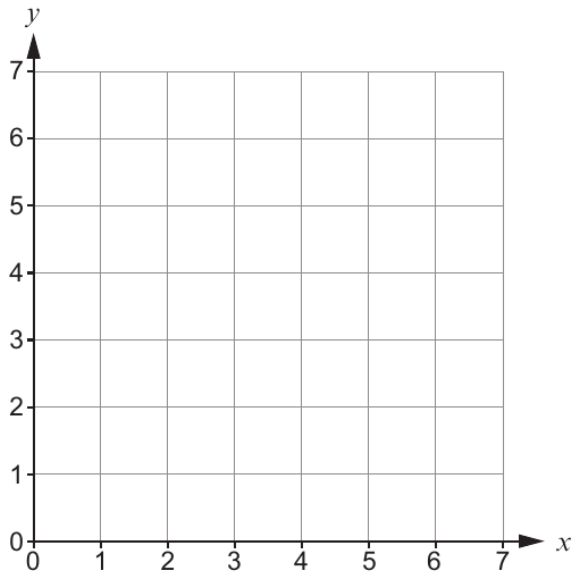
.....

(b) Write in figures the number that is one less than ten thousand. [1]

.....

Examiner only

4. On the grid below, plot the point *A* (4, 6). [1]



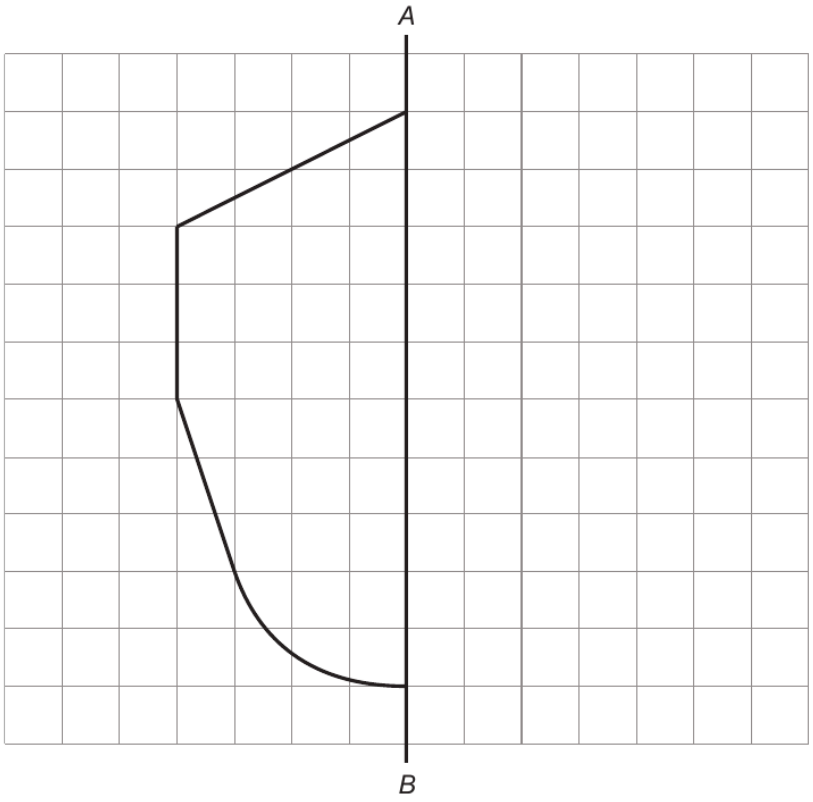
3300U101
05

5. Measure the length of a **diagonal** of this rectangle.
Write down your answer in the space provided. [1]

Length of diagonal = ... cm

Examiner only

5. *(a)* Complete the following figure so that it is symmetrical about the line AB. [2]



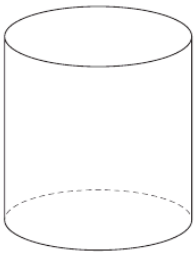
(b) Ben draws a shape that has:

- 4 sides,
- 4 angles of equal size,
- a pair of sides of length 4 cm, and
- a pair of sides of length 6 cm.

What type of shape has Ben drawn?
Circle the correct answer. [1]

square rhombus trapezium rectangle kite

(c) Write down the special name for the shape below. [1]

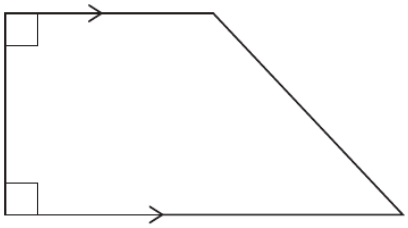


.....

Examiner only

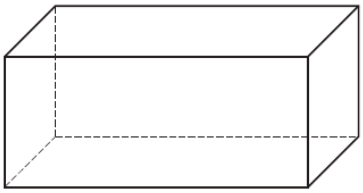
7. Circle the correct answer for each question below.

(a) What is the special name of the shape below? [1]



pentagon rhombus trapezium rectangle kite

(b) What is the special name of the 3D shape below? [1]



cube cuboid cylinder cone sphere

(c) What type of angle is an angle of 181°? [1]

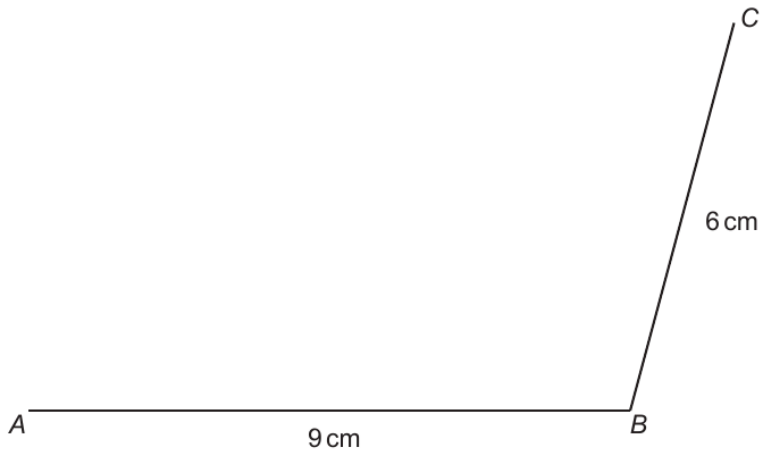
an acute angle | an obtuse angle | a straight line | a right angle | a reflex angle

(d) Which shape has rotational symmetry of order 2? [1]

parallelogram | square | equilateral triangle | isosceles triangle | scalene triangle

Examiner only

9. *(a)* Two sides of a parallelogram *ABCD* are drawn accurately below.
Using only a ruler and a pair of compasses, complete an accurate drawing of the parallelogram.
You must show all your construction arcs. [2]



(b) The line *XY* below forms part of a scale drawing of a garden.
The scale drawing has a scale of 1:200.

What is the actual distance between point *X* and point *Y* in the garden?
Give your answer in **metres**. [3]

.....

.....

.....

.....

Actual distance between point *X* and point *Y* = ... metres

Examiner only

18. A circle, centre O, has a radius of 4 cm.
A and B are points on the circumference of the circle.
Lines PA and PB are both tangents to the circle.
PB = 12 cm.

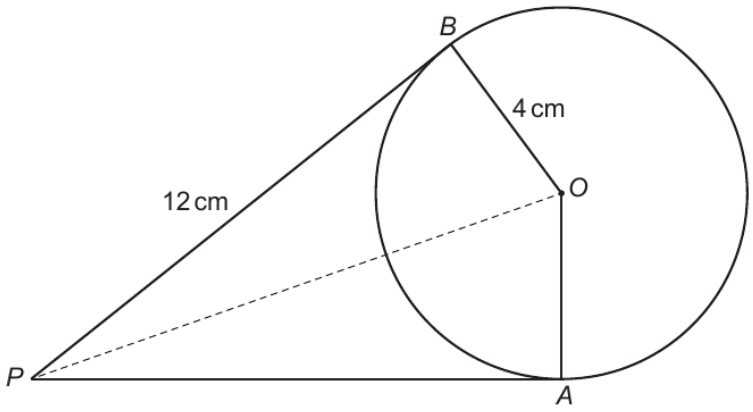


Diagram not drawn to scale

(a) What is the length of PA?
State the circle theorem you have used to find your answer. [1]

PA = ...

Circle theorem: .....

.....

(b) What is the size of $\hat{PAO}$?
State the circle theorem you have used to find your answer. [1]

$\hat{PAO}$ = ...

Circle theorem: .....

.....

(c) Calculate the area of the quadrilateral $PAOB$. [2]

.....

.....

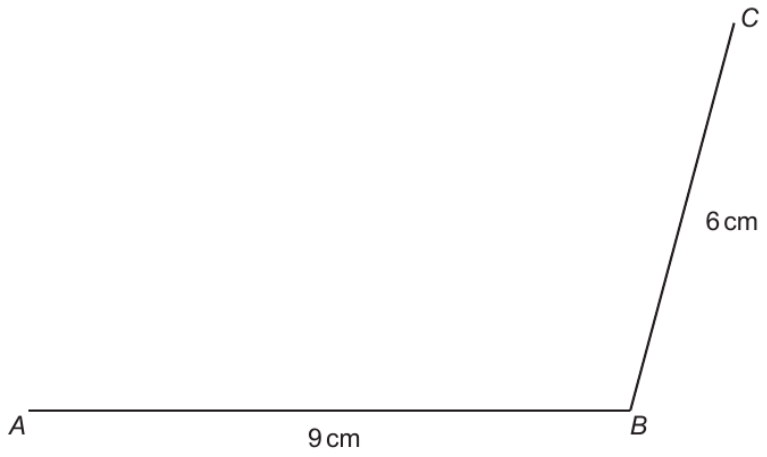
.....

.....

.....

Examiner only

19. *(a)* Two sides of a parallelogram *ABCD* are drawn accurately below.
Using only a ruler and a pair of compasses, complete an accurate drawing of the parallelogram.
You must show all your construction arcs. [2]



(b) The line *XY* below forms part of a scale drawing of a garden.
The scale drawing has a scale of 1:200.

What is the actual distance between point *X* and point *Y* in the garden?
Give your answer in **metres**. [3]

.....

.....

.....

.....

Actual distance between point *X* and point *Y* = ... metres

Examiner only

1. *(a)* Write 95 048 in words. [1]

(b) Find the sum of 872 and 59. [1]

(c) Multiply 250 by 5. [1]

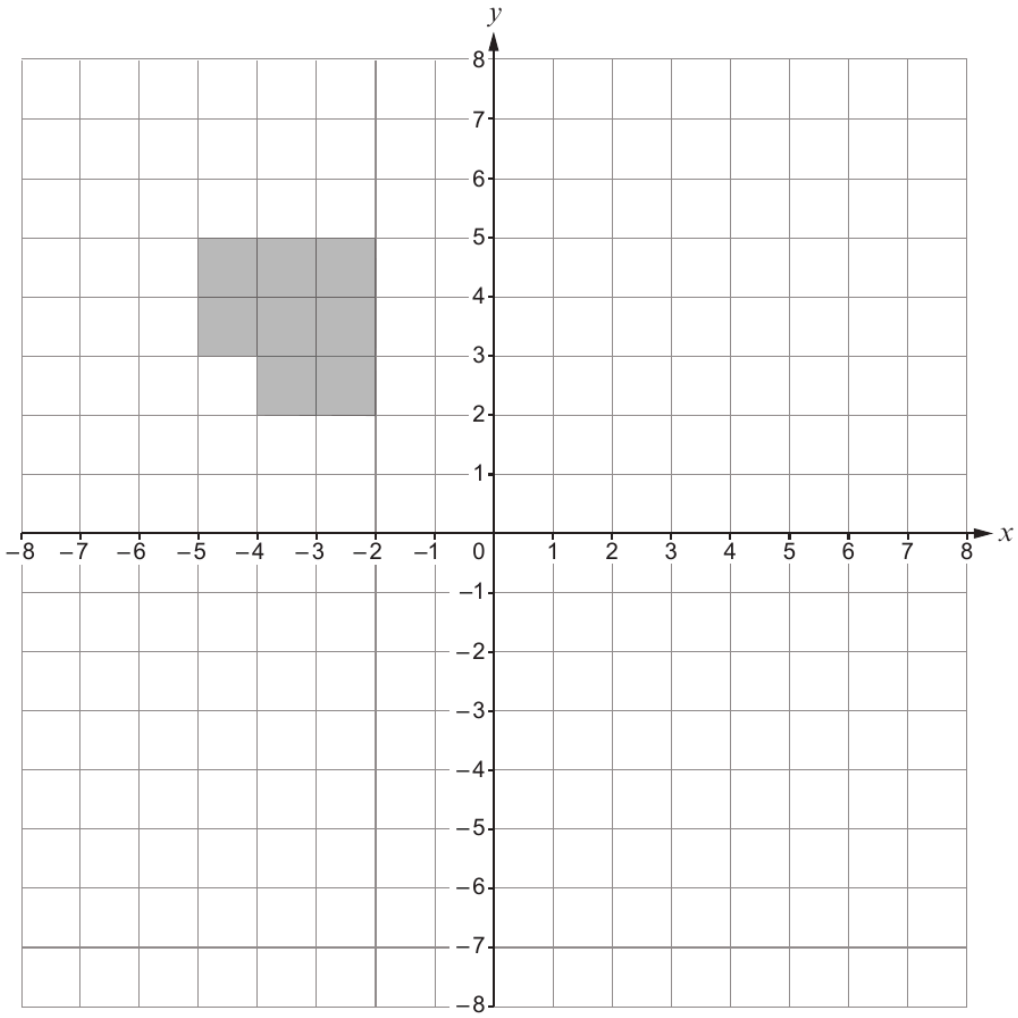
(d) Work out $\frac{1}{3}$ of 624. [1]

(e) Write down all the factors of 18. [2]

The factors of 18 are .....

Examiner only

16. Reflect the shape below in the line $x = 1$. [2]



17. A car travels 129·5 miles in 3 hours 30 minutes.
Calculate the average speed of the car.
Give your answer in miles per hour. [3]

.....

.....

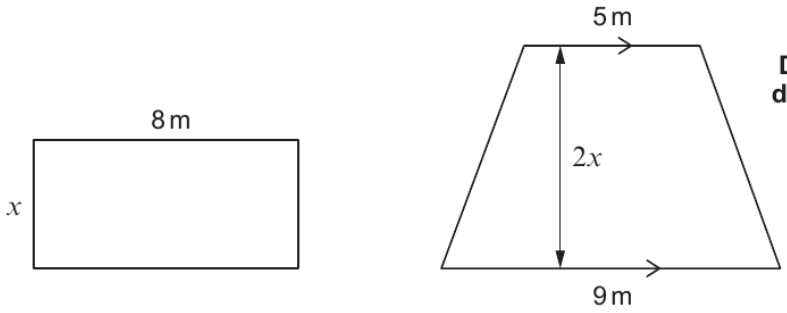
.....

.....

.....

Examiner only

18. A rectangle and a trapezium are shown below.



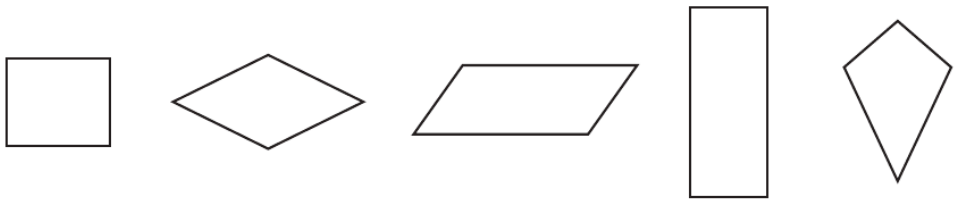
Diagrams not drawn to scale

The area of the rectangle = 48 m^2.
The width of the rectangle is represented by x.
The height of the trapezium is twice the width of the rectangle.

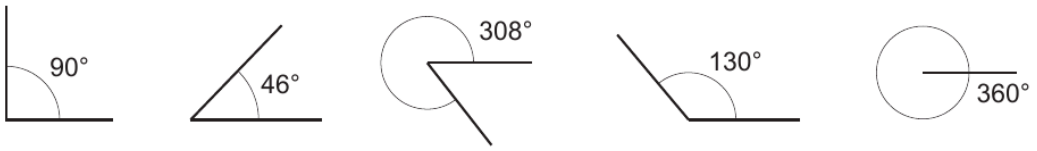
Calculate the area of the trapezium.
You must show all your working. [4]

Examiner only

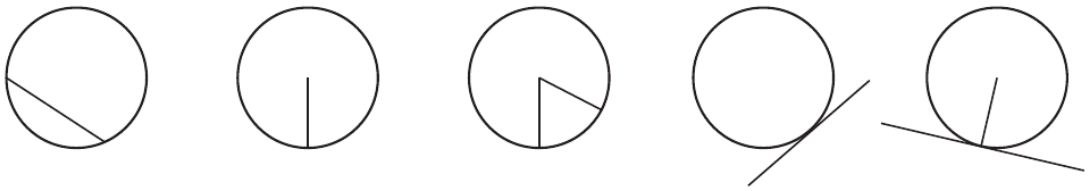
2. (a) The special name for one of the quadrilaterals below is a kite.
Circle the kite. [1]



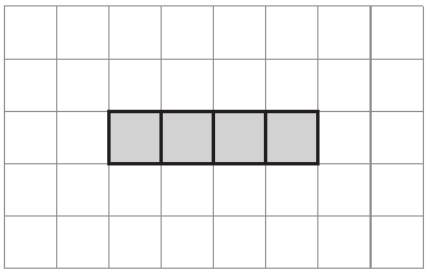
(b) One of the angles shown below is an acute angle.
Circle the acute angle. [1]



(c) One of the diagrams below shows a chord of a circle.
Circle the correct diagram. [1]



(d) Add two squares to the four shaded squares shown below so that the complete diagram forms the net of a cube. [1]



Examiner only

11. (a)

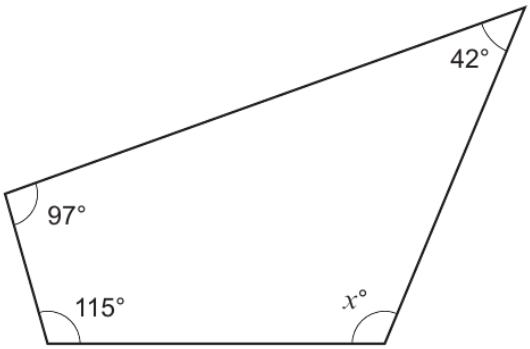


Diagram not drawn to scale

Calculate the value of x. [2]

(b) The diagram below shows an isosceles triangle.

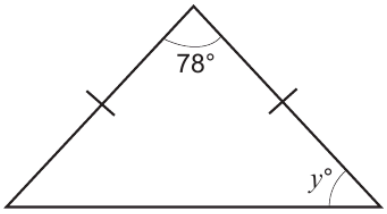


Diagram not drawn to scale

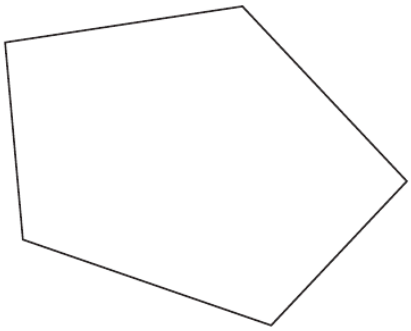
Calculate the value of y. [2]

Examiner only

1. (a) Calculate 5620 × 100. [1]

(b) Write 42 861 correct to the nearest hundred. [1]

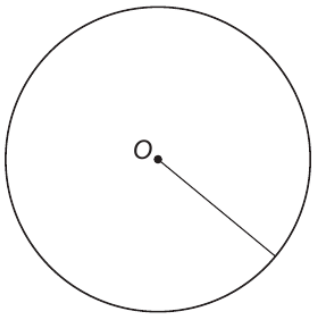
2. (a)



What is the special name of the shape shown above?
Circle your answer. [1]

pentagon hexagon kite parallelogram rhombus

(b)



O is the centre of the circle shown above.

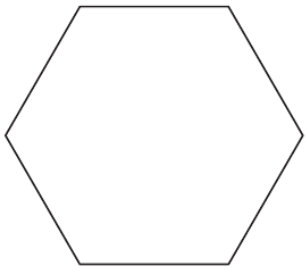
What is the special name of the straight line shown in the diagram?
Circle your answer. [1]

circumference tangent diameter radius chord

Examiner only

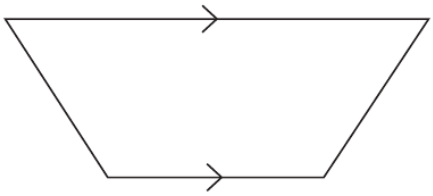
3. (a) Write down the special name of each shape below.

(i)



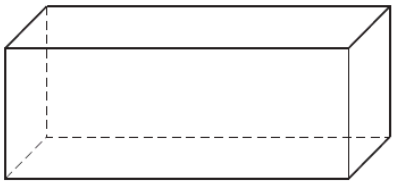
..... [1]

(ii)



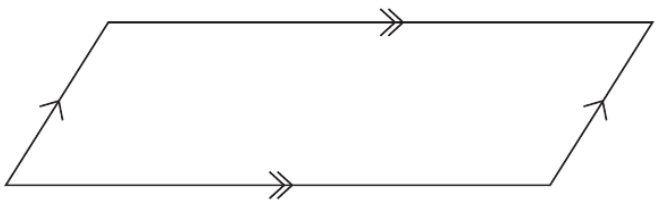
..... [1]

(b) Write down the special name of the 3D shape below.



..... [1]

(c) A parallelogram is shown below.



(i) What is the order of rotational symmetry of the parallelogram?
Circle the correct answer. [1]

0 1 2 3 4

(ii) How many lines of symmetry does the parallelogram have?
Circle the correct answer. [1]

0 1 2 3 4

Examiner only

9. Calculate the area of the trapezium shown below.
You must give the units of your answer. [3]

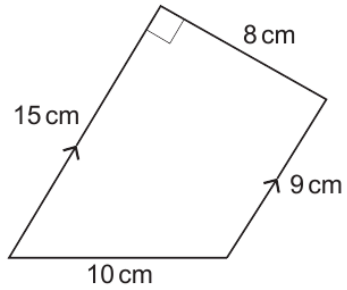


Diagram not drawn to scale

10. Express 945 as a product of its prime factors in index form. [3]