Foundation Check In - 8.01 Conventions, notation and terms

1. Write down the names of any quadrilaterals that have two pairs of parallel sides.
2. Chris draws a triangle and the angle measurements are 35°, 35° and 110°. What is the name given to this type of triangle and which angle is obtuse?
3. How many edges and vertices does a pyramid with a square base have?
4. Write the name of each quadrilateral in the correct position in the table below.

kite trapezium rhombus

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| --- | --- | --- |
|  | Rotational symmetry | No rotational symmetry |
| One or more pairs of diagonally opposite angles are equal |  |  |
| No pairs of diagonally opposite angles are equal |  |  |

1. Which of the following are prisms?

cuboid square-based pyramid cube sphere

1. Explain what is meant by a scalene triangle.
2. Eileen is describing a cube and says it has 6 faces, 6 vertices and 12 edges. Is she correct? Give a reason for your answer.
3. A 3D shape has one less face than a triangular prism and half as many vertices as a cube. What is this 3D shape?
4. Three angles in a triangle are in the ratio 5 : 7 : 24. Calculate the three angles, stating whether each angle is an acute, obtuse, right or reflex angle.
5. A 2D shape with vertices E (1, -1), F (-3, 1) and G (-3, 3) is reflected in the line *y* = -*x* to produce a quadrilateral. Work out the area of this quadrilateral.

**Extension**

An open-top cuboid box has a rectangular base and four sides. The length of its base is twice the width*.*

A second open-top cuboid box has a base length 5 inches longer and base width 2 inches narrower than the first box. The perimeter of its base is 120 inches.

The height of each box is 10 inches.

Jose has to paint the outside of each of the boxes. Which box has the greatest surface area to paint and by how much?

Answers

1. Parallelogram, square, rectangle, rhombus
2. Isosceles triangle and the obtuse angle is 110°.
3. 8 edges and 5 vertices

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| --- | --- | --- |
|  | Rotational symmetry | No rotational symmetry |
| One or more pairs of diagonally opposite angles are equal | Rhombus | Kite |
| No pairs of diagonally opposite angles are equal |  | Trapezium |

1. Cuboid and cube
2. A scalene triangle has three sides of different lengths and no angles are equal.
3. No, she is not correct as a cube has 6 faces, 8 vertices and 12 edges.
4. Triangular-based pyramid
5. 25° (acute), 35° (acute) and 120° (obtuse)
6. 8 cm2

**Extension**

Surface area of the first box = 1862 inches2.

Surface area of the second box = 1931 inches2.

The second box has the largest surface area by 69 inches2.

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| **Assessment Objective** | **Qu.** | **Topic** | **R** | **A** | **G** |  | **Assessment Objective** | **Qu.** | **Topic** | **R** | **A** | **G** |
| AO1 | 1 | Identify quadrilaterals from their properties |  |  |  |  | AO1 | 1 | Identify quadrilaterals from their properties |  |  |  |
| AO1 | 2 | Know the terms for triangles and angles |  |  |  |  | AO1 | 2 | Know the terms for triangles and angles |  |  |  |
| AO1 | 3 | Know the properties of a 3D shape |  |  |  |  | AO1 | 3 | Know the properties of a 3D shape |  |  |  |
| AO1 | 4 | Know the properties of quadrilaterals |  |  |  |  | AO1 | 4 | Know the properties of quadrilaterals |  |  |  |
| AO1 | 5 | Identify prisms |  |  |  |  | AO1 | 5 | Identify prisms |  |  |  |
| AO2 | 6 | Describe the properties of a scalene triangle |  |  |  |  | AO2 | 6 | Describe the properties of a scalene triangle |  |  |  |
| AO2 | 7 | Identify the number of vertices, edges and faces of a cube |  |  |  |  | AO2 | 7 | Identify the number of vertices, edges and faces of a cube |  |  |  |
| AO2 | 8 | Know the properties of 3D shapes |  |  |  |  | AO2 | 8 | Know the properties of 3D shapes |  |  |  |
| AO3 | 9 | Use triangle properties to solve a problem |  |  |  |  | AO3 | 9 | Use triangle properties to solve a problem |  |  |  |
| AO3 | 10 | Use *x* and *y* coordinates in a plane geometry problem |  |  |  |  | AO3 | 10 | Use *x* and *y* coordinates in a plane geometry problem |  |  |  |
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