

**Year 7 Mathematics 2016**

**Common Test 3: 2D and 3D Geometry Time allowed: 60 mins**

**Total marks: 60** **Name**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Show your working for any question worth more than one mark.

1. Give **two** reasons why the 2D shape shown is not a polygon. [2]

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. (a) What is the name of the shape on the right? [4]

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(b) How many angles does it have?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(c) How many diagonals does it have?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

(d) Can the shape be described as regular? *Circle your answer.*  YES / NO

1. Fill in the missing parts of the table below. *The table is not in any order*. [5]

|  |  |
| --- | --- |
| Number of sides | Name of polygon |
| 8 sides |  |
|  | Quadrilateral |
| 7 sides |  |
|  | Nonagon |
| 5 sides |  |

1. Give the correct **name** of the following triangles **and** give the value of the **pronumeral**. [6]



1. Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (b) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (c) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Value of *a*: \_\_\_\_\_ Value of *b*: \_\_\_\_\_ Value of *c*: \_\_\_\_\_\_

1. Calculate the value of *b* in the following quadrilateral. [2]

*b* = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Calculate the value of *x* in each of the following. You must show your working, giving reasons where appropriate.
2. 
3. $x= $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [2]
4. 

 (b) $x= $\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ [2]

1. Name the following quadrilaterals and complete the sentences below them. [4]



 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 This shape has one pair of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ sides in this shape are

 sides equal.

1. For the following questions refer to the numbered shapes shown in the box below. [7]



1. Name solid 3:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name solid 4:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State the number of edges for solid 4:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State the number of vertices for solid 1:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. State the number of faces for solid 6:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give the number of the solid which has

5 faces, 6 vertices and 9 edges.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Give the number of the solid which has 1 face, 0 vertices and 0 edges.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Use a ruler and a pencil to accurately draw the net of a square-based pyramid on the grid provided. [2]

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1. Give the name of the solid for each of the nets drawn below. [3]



1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (b) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (c) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Use a ruler and a pencil to accurately draw an oblique projection of a cuboid. [3]
3. Use a ruler and a pencil to accurately copy the shape shown from an oblique projection to an isometric projection using the isometric paper below. [3]



1. Give the front, right and top views of the following solids. [6]
2. 

Front

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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1.



1. **Sketch** the 3D object depicted by the top, front and side views given in the box below. [3]



 Top Front Side

1. Draw the isometric projection of the object depicted by the views given. [3]





1. Mr Fong asks his 5 children to weed his square garden. In his garden there is a little square pool (as shown in the diagram). He divides the garden into 5 areas of the same size for each child to work on. Show on the diagram how he divides them up evenly. [3]

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|  |  |  |  |
|  |  |  |  |
|  |  | Pool |  |
|  |  |  |  |

The End

*The extra paper below is for any questions you may need to re-do.*

