 

Year 7 MathsName:

**Measuring and geometric reasoning**

1. The shape below is a regular pentagon.

All five sides are exactly the same length.



**Measure accurately one** of the sides, then work out the **perimeter** of the pentagon.

Perimeter  =  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_cm

3 marks

2. (a) The diagram shows part of a ruler.



 Complete these sentences.

 The distance between **A** and **B** is \_\_\_\_\_\_\_\_\_ cm.

1 mark

 The distance between **C** and **D** is \_\_\_\_\_\_\_\_\_cm.

1 mark

(b) Look at the ruler below.



 I want the distance between E and F to be **3½** cm.

 There are **two places** F could be.

 Show the two places by drawing arrows on the ruler.

2 marks

3. (a)


Not drawn accurately

(a) Work out the value of *x*.

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

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Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2 marks

(b) Which of the following describes angle *x*?

 Circle your answer.

 acute obtuse reflex equilateral

1 mark

4. The diagram shows three straight lines.



Work out the sizes of angles *a*, *b* and *c*

Give reasons for your answers.

*a* = \_\_\_\_\_\_\_\_ because   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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1 mark

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

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1 mark

*c* = \_\_\_\_\_\_\_\_ because   \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

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1 mark

5. Jane wants to design a toy engine.

She makes a rough sketch to show some of the measurements.

Jane starts to draw the accurate side view.

Finish Jane’s side view below.

You will need a ruler, an angle measurer or protractor, and a pair of compasses.



4 marks

6. Look at the diagram, made from four straight lines.

The lines marked with arrows are parallel.

Work out the sizes of the angles
marked with letters.

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

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*a* = \_\_\_\_\_\_\_\_\_\_\_\_°          *b* = \_\_\_\_\_\_\_\_\_\_\_\_

*c* = \_\_\_\_\_\_\_\_\_\_\_\_°          *d* = \_\_\_\_\_\_\_\_\_\_\_\_

3 marks

7. A company logo is made of two identical parallelograms.

 

Work out the value of *x*.

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

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

Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ degrees

2 marks

8. An isosceles triangle has an angle of 40°

What are the other two angles?

Give the **two** possible pairs of answers.

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

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

Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

or Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2 marks

9. *AB* and *CD* are parallel lines.

*EF* is at right angles to *GH*.



(a)  Work out the size of the angle marked *r*.

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

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

Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ degrees

2 marks

(b)  Work out the size of the angle marked *s*.

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

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

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

Answer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ degrees

1 mark

10. This pattern has rotation symmetry of order 6.

What is the size of angle *w*?

Show your working.



\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

2 marks

11. This shape is made of four congruent kites meeting at a point.

 

Calculate the size of angle *k*

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

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*k =* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_°

2 marks

**Feedback Form Instructions**

When you have answered as many questions as you can, complete the form on the last page to help you reflect on your work.

How to fill in the form

1 Put your confidence score in Column C. This is not about the number of marks you achieved but how sure you felt while you were answering the question.

|  |  |
| --- | --- |
| **Confidence** | **Definition** |
| 0 | I didn’t answer this one |
| 1 | I guessed the answer |
| 2 | I needed help with the answer |
| 3 | I understood the question but wasn’t sure about my answer |
| 4 | I was fairly confident I would get most of the marks |
| 5 | I was sure my answer was correct and I would get full marks |

2 Use the mark scheme to check your answers.

 Put the mark you think you achieved in Column Mark.

3 Write an overall comment about how you felt each question went.

* If you got help, make a note in the comment box specifying the source: internet,
friend, book, parent or tutor.

4 Complete ‘I can…’ and ‘I need to…’ sentences.

* ‘I can…’ sentences might include the questions you found easiest to answer, got the most marks for or felt the most confident about.
* ‘I need to…’ sentences might include areas you need to revise, questions you want to ask your teacher or the next topic or skill you want to work on.

5 Return the form to your teacher.

Feedback formName

|  |  |  |
| --- | --- | --- |
| Qu | Total marks | **Self-assessment** |
| C | Mark | Comment |
| 1 | 3 |  |  |  |
| 2 | 4 |  |  |  |
| 3 | 3 |  |  |  |
| 4 | 3 |  |  |  |
| 5 | 4 |  |  |  |
| 6 | 3 |  |  |  |
| 7 | 2 |  |  |  |
| 8 | 2 |  |  |  |
| 9 | 3 |  |  |  |
| 10 | 2 |  |  |  |
| 11 | 2 |  |  |  |
| **Overall**I can ……I need to ……. |

|  |  |  |
| --- | --- | --- |
| Qu | Total marks | **Teacher review** |
| Mark | Comment |
| 1 | 3 |  |  |
| 2 | 4 |  |  |
| 3 | 3 |  |  |
| 4 | 3 |  |  |
| 5 | 4 |  |  |
| 6 | 3 |  |  |
| 7 | 2 |  |  |
| 8 | 2 |  |  |
| 9 | 3 |  |  |
| 10 | 2 |  |  |
| 11 | 2 |  |  |
| **Overall**You can ……You need to ……. |