Name: . . . .   **GCSE Mathematics Higher**

Number Test

Submission

To mark this test you submit the answers using the online Number quiz at:
www.edu-sol.co.uk/diagnostic.asp

If you have not completed a maths online quiz before then you may wish to try the
Practice Quiz.

After you submit your answers, record the date, attempt number and the username you
used to login. You can then re-visit the site and review your test and feedback.

Date and Attempt Number: . . . .   Username: . . . .

You are advised to answer the questions fully on this question paper. This will help
later when you check your working against the feedback. If you prefer, however, you
can go direct to the quiz.   Some questions have several parts but it is only the **quiz
answer** that you submit online.

Do not write a unit in an answer. For example, write £10 as 10 and 15mm as 15.

Grading

Total questions: 10. Maximum mark: 20.

As soon as you complete the online submission you receive your mark and feedback.

1. **Salary** and **Using a Calculator** (3 marks)

    (a) **Salary** (2 marks)
    A junior technician earns £275 per week. How much is that on average per month?
    There are 12 months and 52 weeks in a year. Write the answer to the nearest 1p.

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    (b) **Using a Calculator** (1 mark)
    This question tests the use of brackets and the BODMAS rule when using a calculator.
    The calculation below is written as a numerator divided by denominator.

    $$\frac{3.6 - 2.4}{2.6 + 1.4}$$

    Write the calculation by showing the calculator keys you press. Use '+' for addition, '-'
    for subtraction and '÷' for division. Remember to include the brackets '(' and ')'.

    For example, using a calculator and brackets for this calculation:

    $$\frac{11 - 2}{3}$$

    you press these calculator keys: (11-2)÷3. The brackets show that the 11-2 must be
    calculated first before dividing by 3.

                                                                    continued

You are **not** asked to complete the calculation. Do not show the result of the calculation, just the calculator keys you press to do calculation. Make sure that you enter the numbers in the order given in the question and start with the numerator.

(a) Quiz answer: £. . . . .   (b) Quiz answer: . . . .

2. **Exchange Rate** (1 mark)
   The exchange rate for the Bangladesh taka is £1 = 108 taka. Abdul Hamid changes a £50 traveller's cheque into taka. How many taka will he receive?

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   Quiz answer: . . . . taka

3. **Percentage Reduction** (4 marks)

   (a) (2 marks) What is the percentage reduction when a £60 printer is reduced to £45?

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   (b) (2 marks) The £45 is reduced again by 10%. Calculate the overall percentage reduction of the £60. Note – do not just add together the two percentage reductions.

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   (a) Quiz answer: . . . . %   (b) Quiz answer: . . . . %

4. **Standard Form** (1 mark)
   The number of people in the world in 2007 was about 6.53×10^9. Rewrite the number in ordinary form. You can use commas as in 259,090,000 or omit the commas as in 259090000.

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   Quiz answer: . . . .

5. **Cake Mix** (2 marks)
   Mrs. Brown is making a cake for a birthday party. The recipe asks for 2 parts of butter to 3 parts of flour. If the total weight of butter and flour is to be 1.5kg, how much flour should she weigh out? Express your answer in kg.

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   Quiz answer: . . . . kg

6. **Rainfall** (2 marks)
Rainfall was measured in millimetres (mm) for seven days. The measurements were as follows:

3.5	8.6	1.9	1.6	4.5	0	1.6

Calculate the average (the mean) daily rainfall over the seven days.

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Quiz answer: . . . . mm

7. **Decimal** (1 mark)
Write 120% as a decimal

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Quiz answer: . . . .

8. **Percent** (1 mark)
Write 1¼ as a percentage.

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Quiz answer: . . . . %

9. **Square Root** and **Rationalise a Denominator** (3 marks)

(a) (1 mark) This part tests the use of a calculator. Use a calculator to work out the value of $\sqrt{2.56} + \sqrt{1.96}$

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(b) (2 marks) This part is about rationalising the denominator of $\frac{24}{\sqrt{3}}$ to give $8\sqrt{3}$.

The options below show the first stage of the rationalisation. Select the best option:

A $\frac{24}{\sqrt{3}} = 8$ B $\frac{24 \times \sqrt{3}}{\sqrt{3}} = 24$ C $\frac{24}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = \frac{24 \times \sqrt{3}}{3}$ D $\frac{24}{\sqrt{3}} = 8$ E $\frac{24}{\sqrt{3} \times \sqrt{3}} = \frac{24}{9}$

(a) Quiz answer: . . . .   (b) Quiz answer: . . . .

10. **Temperature** (2 marks)
A freezer used to make ice reduces the temperature of water at 20ºC by 30ºC.
Calculate the temperature of the ice formed.

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Quiz answer: . . . . ºC

End of Questions