Test 1 **Essential Maths Book 7H Units 1 & 2**

No calculators

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1. The numbers below go up in equal steps.

Find the missing numbers.

	7	13	19		

(2 marks)

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2. a) Work out $\frac{3}{5}$ of £20 (1 mark)

b) Work out $\frac{3}{4}$ of £36 (1 mark)

c) Work out $\frac{1}{2} + \frac{2}{5}$ (1 mark)

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3. An expression for the **perimeter** of this shape is perimeter = $3a + 8$

Write an expression for the perimeter of the shapes below.

Write the answer in its simplest form.

a)

b)

c)

(3 marks)

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4. a) Write two different fractions that are less than 1 but greater than $\frac{1}{3}$. (2 marks)

b) Simplify the fractions as far as possible (2 marks)

i) $\frac{10}{15}$ ii) $\frac{28}{42}$

5. Here are four number cards

1	3	5	8

Use the four number cards to make the answer to the calculation as **large** as possible.

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(2 marks)

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6. The grids in this question are centimetre square grids.

a) What is the area of this shaded rectangle?

(1 mark)

b) What is the area of this shaded triangle?

(1 mark)

c) What is the area of this shaded shape?

(1 mark)

d) What is the *name* of this shaded shape?

(1 mark)

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7. a) In a test Ben answered 28 questions out of 40 correctly.
What percentage of the questions did he answer correctly? (2 marks)

b) Work out 8% of £240 (1 mark)

8. In this diagram the two parallel lines are marked with arrows.

Find the value of x (2 marks)

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9. You are given that $\boxed{29 \times 31 = 899}$

a) What is the remainder when 900 is divided by 29? (1 mark)

b) What is the remainder when 897 is divided by 31? (1 mark)

c) Which of the following are prime numbers?

29, 31, 33, 899, 903 (2 marks)

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10. a) Find the *median* of the numbers 6, 11, 3, 14, 11, 8, 5 (1 mark)

b) Here are four number cards.

5	10	7	?

The *mean* is 7.

What is the missing number? (2 marks)

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11. The numbers in each sequence go up in equal steps.

Find the missing numbers

a) 170, ☐ , ☐ , 260

b) ☐ , 20, 50, ☐

c) -11, ☐ , ☐ , 10 (3 marks)

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12. Work out the size of angles x and y

(3 marks)

13. Find the missing number in each calculation

a) $\frac{\square}{5}$ of 40 = 16 (1 mark)

b) $\frac{4}{\square}$ of 14 = 8 (1 mark)

c) $\frac{3}{10}$ of $\square$ = 15 (1 mark)

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14. The shape here is made with centimetre squares.

(Diagram is not to scale)

a) Write down the area of the shape.

b) Write down the perimeter of the shape.

c) Draw a shape made with centimetre squares which has an area of $6cm^2$ and a perimeter of 14cm. (3 marks)

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15. Work out each of the following

a) $\sqrt{64}$

b) 2^5

c) $1^3 - (\frac{1}{2})^2$

d) 10% of 10^4 (4 marks)

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16. The two shapes below are made from right-angled triangles with sides 6cm, 8cm and 10cm.

a) Find the *area* of shape A (1 mark)

b) Find the *perimeter* of shape B (2 marks)

A

B

17. The sequences in this question go up in *equal* steps.

a) The 2nd term is 7
The 3rd term is 13
What is the 5th term? (1 mark)

b) The 2nd term is 1
The 5th term is 10
What is the first term? (2 marks)

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18. Write down each calculation and find the missing numbers

a) $-5 \times \square = 20$

b) $8 - \square = -3$

c) $4 \times \square = -36$

d) $-6 - (-4) = \square$

(4 marks)

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19. Give an *estimate* for each of the following calculations.
Show your working.

a) $\dfrac{41.8 \times 69.4}{10.4}$

b) $\dfrac{3}{5}$ of 1012

c) 48.5% of £986.25

d) $19.6^2 - 2.14$

(4 marks)

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20. In this question use $\pi = 3$

a) Find the *area* of a circle of *diameter* 10cm. (2 marks)

b) The diagram shows a semicircle of *diameter* 10cm.

Work out the perimeter of the semicircle. (3 marks)