Centre Number Candidate Number

Name

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UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS Cambridge Checkpoint

MATHEMATICS

1112/01

Paper 1

November 2005

1 hour

Candidates answer on the question paper Additional Materials: Protractor

Ruler

NO CALCULATOR ALLOWED

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name on all the work you hand in. Write in dark blue or black pen in the spaces provided on the Question Paper. You are not allowed to use a calculator.

Answer all questions.

You may use a soft pencil for any diagrams or graphs.

You should show all your working in the booklet.

The total number of marks for this paper is 50.

The number of marks is given in brackets [] at the end of each question or part question.

| Loc | ok at these numb | ers. | | | | | |
|-----|------------------|------------------------|------------|---|---|----|------|
| | 5 | 6 | 7 | 8 | 9 | 10 | |
| Usi | ing only the nun | nbers above , v | vrite dowr | 1 | | | |
| (a) | a prime number | •, | | | | | |
| | | | | | | | [1] |
| (b) | a square numbe | r. | | | | | |
| () | 1 | , | | | | | [1] |
| | | | | | | | |
| (c) | a factor of 55, | | | | | | F4.7 |
| | | | | | | | [1] |
| (d) | $\sqrt{36}$, | | | | | | |
| | | | | | | | [1] |
| (a) | a auha mumbar | | | | | | |
| (e) | a cube number. | | | | | | |

[1]

2 Write the correct number to go in each box.

$$(a) \quad 3 \times \boxed{ } = 21$$

(b) half of
$$25 =$$
 [1]

(c)
$$-101 = 200$$
 [1]

(d)
$$23 \div 1000 =$$
 [1]

(e)
$$7 + 10 \div$$
 = 9

3

| A box contains 20 computer discs. | | |
|---|------|-----|
| (a) $\frac{2}{5}$ of the discs are used. | | |
| (i) Write $\frac{2}{5}$ as a decimal. | | |
| | | [1] |
| (ii) Write $\frac{2}{5}$ as a percentage. | | |
| | | [1] |
| (iii) Work out how many discs are used. | | E4. |
| | | [1] |
| (b) 30% of the discs are damaged. Write this as a fraction in its simplest fo | orm. | |
| | | [2 |

4

| A school team plays nine football matches. | | | | | | | | | |
|--|--|------------|------------|-----------|------|---|---|---|-----|
| The list | The list shows the number of goals scored in each match. | | | | | | | | |
| 1 | 0 | 5 | 8 | 1 | 5 | 0 | 5 | 2 | |
| (a) Wri | te down the | e range of | goals sco | red. | | | | | |
| | | | | | | | | | [1] |
| (b) Wri | te down the | e modal n | umber of | goals sco | red. | | | | |
| | | | | **** | | | | | [1] |
| (c) Woi | (c) Work out the median number of goals scored. | | | | | | | | |
| | | | S | | | | | | [1] |
| | | | | | | | | | L-J |
| (d) Wo | k out the n | nean num | ber of goa | ls scored | | | | | |
| | | | | | | | | | |
| | | | | | | | | | [2] |

| 5 | (a) | Show that | 34×1 | .2. = | = 40.8 |
|---|-----|-----------|---------------|-------|--------|

| | [2] |
|---|---------|
| (b) Use part (a) to write down the value of | |
| (i) 3.4×1.2 , | |
| | [1] |
| (ii) 340×0.12 , | |
| | [1] |
| (iii) 17 × 12. | |
| | [1] |

| 6 | Find the | value | of the | following | expressions | when |
|---|----------|-------|--------|-----------|-------------|------|
| | | | | | | |

$$r = 4$$
, $e = 5$ and $x = 6$.

(a)
$$5r + 3x + 2e$$



(b)
$$\frac{3re}{x}$$

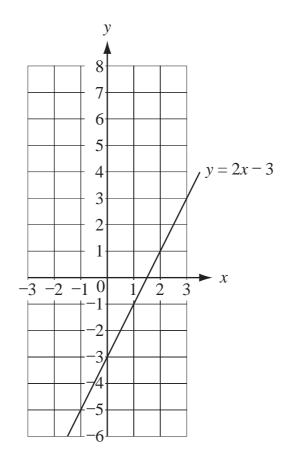
(c)
$$4e^2$$

7 (a) Complete the table of values for y = -3x + 2.

| х | -2 | -1 | 0 | 1 | 2 |
|---|----|----|---|---|---|
| У | | 5 | 2 | | |

[2]

(b) Use your results to plot the graph of y = -3x + 2 on the grid below.



[2]

(c) The graph of y = 2x - 3 has been drawn on the grid above. Use the two graphs to solve the simultaneous equations

$$y = -3x + 2,$$

$$y = 2x - 3.$$

x = [1]

$$y =$$
 [1]

| 8 | Solve the | following | equations. |
|---|-----------|-----------|------------|
|---|-----------|-----------|------------|

(a)
$$4x + 7 = 19$$

$$x =$$
 [2]

(b)
$$3(x-2) = 12$$

$$x =$$
 [3]

9 Write the number 53 467



(b) correct to three significant figures,



(c) in standard form.

10 The table shows some time differences. It is not complete.

| City | Hours difference from London |
|--------------|------------------------------|
| Los Angeles | -10 |
| Mexico City | -6 |
| Buenos Aires | |
| London | 0 |
| Johannesburg | +2 |
| Riyadh | |
| Wellington | +12 |

| (a) | Wr | rite down the time difference between | een | | |
|-----|------|--|--|-------|-----|
| | (i) | Los Angeles and Johannesburg, | | | |
| | | | | hours | [1] |
| | (ii) | Johannesburg and Wellington, | | | |
| | | | | hours | [1] |
| (| iii) | Los Angeles and Mexico City. | | | |
| | | | | hours | [1] |
| (b) | The | alik flies from Los Angeles to Riya e time difference is 13 hours. w many hours ahead of London is | | | |
| | | | | | [1] |
| (c) | | is flies from Johannesburg to Buen w many hours is Buenos Aires beh | os Aires. The time difference is 5 hou ind London? | urs. | |
| | | | | | [1] |

11

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