1.2 Place Value, Negative Numbers and Roman Numerals: Test Pack

NCETM National Curriculum (2014) Mathematics - KS2 Number: Place Value, Negative Numbers, Roman Numerals · Calculators not allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions. Show all your working.

1 For each 7-digit or 6-digit number, write the value of the underlined digit.

(a) In 5,3<u>8</u>4,271 what is the value of the digit 8? **(1)**

(b) In <u>5</u>,384,271 what is the value of the digit 5? **(1)**

(c) In 69<u>2</u>,015 what is the value of the digit 9? **(1)**

(d) In 69<u>2</u>,015 what is the value of the digit 2? **(1)**

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2 Priya writes the Roman numeral for 99 as IC. Explain her mistake, and write the correct Roman numeral for 99.

(3)

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3 The height above sea level (positive) or below sea level (negative) of four locations is given: Point A: -35m, Point B: 120m, Point C: -8m, Point D: 0m.

(a) Order the four locations from lowest to highest. **(2)**

(b) What is the difference in height between Point A and Point B? **(2)**

.....

4 The Battle of Hastings took place in the year MLXVI. The Battle of Bosworth took place in the year MCDLXXXV.

(a) Write each year using standard (Arabic) numerals. **(2)**

(b) Calculate how many years passed between the two battles. **(2)**

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5 Amir is thinking of a whole number. It is negative. Ignoring the sign, the tens digit is 4. The number is between -50 and -30. Ignoring the sign, the units digit is an odd number greater than 5. The sum of its digits (ignoring the sign) is 11. What is Amir's number?

(4)

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6 A museum's annual visitor total, written in Roman numerals, was MMMCDLII.

(a) Convert MMMCDLII to standard (Arabic) numerals. **(2)**

(b) The museum wants to display this figure rounded to the nearest hundred on a sign. What number should the sign show? **(2)**

(c) The following year, visitor numbers fell by 168 compared to the figure in part (a). Calculate the new number of visitors, then write it as a Roman numeral. **(4)**

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7 Write <, > or = between each pair of numbers.

(a) 3,482,910 ___ 3,428,910 **(1)**

(b) 5,096,214 ___ 5,096,241 **(1)**

(c) 900,000 ___ 89,999 **(1)**

(d) 4,000,001 ___ 4,000,010 **(1)**

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8 Write these numbers in order, starting with the largest.

404,633, 423,301, 364,794, 376,329

Answer: ___

(1)

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9 Estimate 5,260 - 4,863 by rounding each number to the nearest 1,000 first.

Answer: ___

(2)

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10 A newspaper and a football club round attendance figures before publishing them.

(a) A stadium had 58,742 people at a match. The newspaper reports this rounded to the nearest thousand. What figure did the newspaper report? **(2)**

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(b) The away end had 7,368 fans. The club rounds this to the nearest hundred for its report. What figure did the club report? **(2)**

.....

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11 A number line starts at 0 and goes up in equal steps of 1,000. An arrow points to the 7th mark after the start.

What number does the arrow show?

Answer: ___

(1)

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12 Complete the partition.

2,202 = 2,000 + ___ + 2

Answer: ___

(1)

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13 Round each number as instructed.

(a) Round 4,382 to the nearest 100. **(1)**

(b) Round 67,451 to the nearest 1,000. **(1)**

(c) Round 8,073 to the nearest 10. **(1)**

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14 Find the missing number in this sequence.

736, 711, 686, 661, 636, ___

Answer: ___

(1)

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15 3,630 x 10 =

Answer: ___

(1)

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16 What is 10,000 less than 310,880?

Answer: ___

(1)

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17 The Great Fire of London happened in the year written as MDCLXVI in Roman numerals. Write this year using standard (Arabic) numerals.

(2)

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Mark scheme · 1.2 Place Value, Negative Numbers and Roman Numerals: Test Pack

A correct answer earns full marks unless the question asks for working, a method, proof or explanation.

Question 1

(a) 80,000 cao **B1**

(a) Answer: **80,000**

(b) 5,000,000 cao **B1**

(b) Answer: **5,000,000**

(c) 90,000 cao **B1**

(c) Answer: **90,000**

(d) 2,000 cao **B1**

(d) Answer: **2,000**

Question 2

valid explanation, e.g. a smaller numeral can only be subtracted from the numeral immediately above it in the standard sequence, so I can only come before V or X, not C oe **B1**

correct method, e.g. 99 = 90 + 9 = XC + IX oe **B1**

XCIX cao **B1**

Answer: **XCIX**

Question 3

(a) correctly places at least 3 of the 4 locations **M1**

(a) A (-35m), C (-8m), D (0m), B (120m) fully correct cao **A1**

(a) Answer: **A (-35m), C (-8m), D (0m), B (120m)**

(b) 120 - (-35) oe, or counts the gap across zero **M1**

(b) 155m cao **A1**

(b) Answer: **155m**

Question 4

(a) 1066 cao (MLXVI) **B1**

(a) 1485 cao (MCDLXXXV) **B1**

(a) Answer: **1066 and 1485**

(b) ft 1485 - 1066 oe using their answers to part (a) **M1**

(b) 419 years cao **A1**

(b) Answer: **419 years**

Question 5

recognises the number lies in the 40s (ignoring sign), from the tens digit and the range clue **M1**

narrows the units digit to 7 or 9 from the odd-and-greater-than-5 clue, giving 47 or 49 **M1**

uses the digit sum clue (4 + 7 = 11, not 4 + 9 = 13) to select 47 **A1**

-47 cao **A1**

Answer: **-47**

Question 6

(a) MMM(3000) + CD(400) + L(50) + II(2) oe **M1**

(a) 3,452 cao **A1**

(a) Answer: **3,452**

(b) ft rounds their part (a) answer using the tens digit (5) **M1**

(b) 3,500 cao **A1**

(b) Answer: **3,500**

(c) ft their part (a) answer - 168 **M1**

(c) 3,284 cao **A1**

(c) converts 3,284 into MMM + CC + LXXX + IV oe **M1**

(c) MMMCCLXXXIV cao **A1**

(c) Answer: **3,284 = MMMCCLXXXIV**

Question 7

(a) > cao **B1**

(a) Answer: **>**

(b) < cao **B1**

(b) Answer: **<**

(c) > cao **B1**

(c) Answer: **>**

(d) < cao **B1**

(d) Answer: **<**

Question 8

423,301, 404,633, 376,329, 364,794 cao **B1**

Answer: **423,301, 404,633, 376,329, 364,794**

Question 9

5,000 and 5,000 seen **M1**

0 cao **A1**

Answer: **0**

Question 10

(a) identifies the hundreds digit (7) as the rounding digit **M1**

(a) 59,000 cao **A1**

(a) Answer: **59,000**

(b) identifies the tens digit (6) as the rounding digit **M1**

(b) 7,400 cao **A1**

(b) Answer: **7,400**

Question 11

7,000 cao **B1**

Answer: **7,000**

Question 12

200 cao **B1**

Answer: **200**

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Question 13

(a) 4,400 cao **B1**

(a) Answer: **4,400**

(b) 67,000 cao **B1**

(b) Answer: **67,000**

(c) 8,070 cao **B1**

(c) Answer: **8,070**

Question 14

611 cao **B1**

Answer: **611**

Question 15

36,300 cao **B1**

Answer: **36,300**

Question 16

300,880 cao **B1**

Answer: **300,880**

Question 17

breaks the numeral into M(1000) + D(500) + C(100) + L(50) + X(10) + VI(6) oe **M1**

1666 cao **A1**

Answer: **1666**

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