

# Reasoning and Problem Solving

## Step 1: Roman Numerals

### National Curriculum Objectives:

Mathematics Year 5: (5N3b) [Read Roman numerals to 1,000 \(M\) and recognise years written in Roman numerals](#)

### Differentiation:

Questions 1, 4 and 7 (Problem Solving)

**Developing** Complete addition and subtraction calculations using numbers and Roman numerals up to 100.

**Expected** Complete addition and subtraction calculations using numbers and Roman numerals up to 1,000.

**Greater Depth** Complete addition and subtraction calculations using only Roman numerals up to 1,000.

Questions 2, 5 and 8 (Reasoning)

**Developing** Use knowledge of Roman numerals to 100 to work out the value of Roman numerals beyond 100 (multiples of 10).

**Expected** Use knowledge of Roman numerals to 1,000 to work out the value of Roman numerals beyond 1,000 (multiples of 10).

**Greater Depth** Use knowledge of Roman numerals to 1,000 to work out the value of Roman numerals beyond 1,000.

Questions 3, 6 and 9 (Problem Solving)

**Developing** Arrange 3 cards to create different Roman numerals to 100. Find all the possibilities.

**Expected** Arrange 4 cards to create different Roman numerals to 1,000. Find all the possibilities.

**Greater Depth** Arrange 5 cards to create different Roman numerals to 1,000. Find all the possibilities.

More [Year 4 and Year 5 Place Value](#) resources.

Did you like this resource? Don't forget to [review](#) it on our website.

## Roman Numerals

1a. Complete the calculations. Write the answers in Roman numerals.

$$\text{LX} + 20 = \boxed{\phantom{000}}$$

$$90 - \text{XXXVI} = \boxed{\phantom{000}}$$

$$\text{XCI} + 8 = \boxed{\phantom{000}}$$



5 PS

## Roman Numerals

1b. Complete the calculations. Write the answers in Roman numerals.

$$\text{XLIX} - 30 = \boxed{\phantom{000}}$$

$$85 + \text{XIII} = \boxed{\phantom{000}}$$

$$74 - \text{XXIV} = \boxed{\phantom{000}}$$



5 PS

2a. Using your knowledge of Roman numerals to 100, work out the value of the Roman numeral below.

CC

Explain your reasoning.



5 R

2b. Using your knowledge of Roman numerals to 100, work out the value of the Roman numeral below.

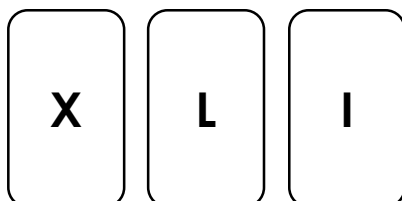
CL

Explain your reasoning.



5 R

3a. Arrange the cards below to create different Roman numerals. Each card may only be used once.

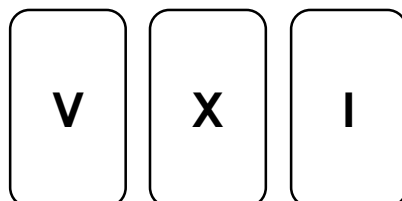


Find all the possibilities.



5 PS

3b. Arrange the cards below to create different Roman numerals. Each card may only be used once.



Find all the possibilities.



5 PS

## Roman Numerals

4a. Complete the calculations. Write the answers in Roman numerals.

$$200 + CCI = \boxed{\phantom{000}}$$

$$DC - 45 = \boxed{\phantom{000}}$$

$$CCCL + 150 = \boxed{\phantom{000}}$$



5 PS

## Roman Numerals

4b. Complete the calculations. Write the answers in Roman numerals.

$$485 - CCXV = \boxed{\phantom{000}}$$

$$241 + DCXXXIV = \boxed{\phantom{000}}$$

$$CMXI - 303 = \boxed{\phantom{000}}$$



5 PS

5a. Using your knowledge of Roman numerals to 1,000, work out the value of the Roman numeral below.

**MMM**

Explain your reasoning.



5 R

5b. Using your knowledge of Roman numerals to 1,000, work out the value of the Roman numeral below.

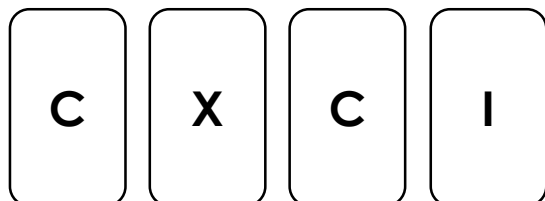
**MLX**

Explain your reasoning.



5 R

6a. Arrange the cards below to create different Roman numerals. Each card may only be used once.

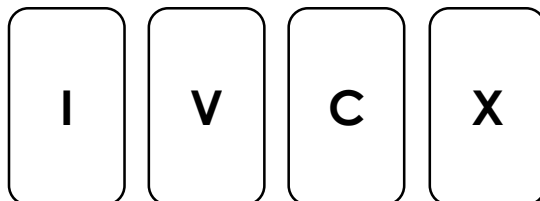


Find all the possibilities.



5 PS

6b. Arrange the cards below to create different Roman numerals. Each card may only be used once.



Find all the possibilities.



5 PS

## Roman Numerals

7a. Complete the calculations. Write the answers in Roman numerals.

$$CCCXII + CVI =$$

$$DCCXXI - CCXV =$$

$$CDXCI + CCCLX =$$



5 PS

## Roman Numerals

7b. Complete the calculations. Write the answers in Roman numerals.

$$M - DXLVIII =$$

$$DCXXIX + CXIII =$$

$$CMVI - CDXIV =$$



5 PS

8a. Using your knowledge of Roman numerals to 1,000, work out the value of the Roman numeral below.

**MCDIX**

Explain your reasoning.



5 R

8b. Using your knowledge of Roman numerals to 1,000, work out the value of the Roman numeral below.

**MMDCII**

Explain your reasoning.



5 R

9a. Arrange the cards below to create different Roman numerals. Each card may only be used once.

I

X

C

I

D

Find all the possibilities.



5 PS

9b. Arrange the cards below to create different Roman numerals. Each card may only be used once.

X

V

C

I

C

Find all the possibilities.



5 PS

## Reasoning and Problem Solving Roman Numerals

### Developing

- 1a. LXXX, LIV, XCIX  
2a. C = 100; CC = 200  
3a. 3 possibilities: XLI (41); LXI (61); LIX (59)

### Expected

- 4a. CDI, DLV, D  
5a. M = 1,000; MMM = 3,000  
6a. 3 possibilities: CXCI (191); CCIX (209);  
CCXI (211)

### Greater Depth

- 7a. CDXVIII, DVI, DCCCLI  
8a. M = 1,000; CD = 400; IX = 9;  
MCDIX = 1,409  
9a. 3 possibilities: CDXII (412); DCXII (612);  
DXCII (592)

## Reasoning and Problem Solving Roman Numerals

### Developing

- 1b. XIX, XCVIII, L  
2b. C = 100; L = 50; CL = 150  
3b. 2 possibilities: XIV (14); XVI (16)

### Expected

- 4b. CCLXX, DCCCLXXV, DCVIII  
5b. M = 1,000; L = 50; X = 10; MLX = 1,060  
6b. 4 possibilities: CXIV (114); CXVI (116);  
XCIV (94); XCVI (96)

### Greater Depth

- 7b. CDLII, DCCXLII, CDXCII  
8b. M = 1,000; D = 500; C = 100; II = 2;  
MMDCII = 2,602  
9b. 4 possibilities: CCXIV (214);  
CCXVI (216); CXCIV (194); CXCVI (196)