1)

Roman Numeral	Number	Words
LXX	70	seventy
IX	9	nine
XI	11	eleven
XXXIV	34	thirty-four
There is no representation for zero in Roman numerals.	0	zero

2)

X = 10
V = 5
C = 100
L = 50
IV = 4
XCIX = 99
XL = 40

LXXX = 80
XIII = 13
XLIV = 44
LXXV = 75
XXXVI = 36
XXIX = 29
XC = 90

1	2	3	④	⑤	6	7	8	9	⑩
11	12	⑬	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	㉙	30
31	32	33	34	35	㊱	37	38	39	㊵
41	42	43	㊹	45	46	47	48	49	㊿
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	㊄	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

3)

6	7	VIII	XI	10	XI	XII

C	XC	LXXX	LXX	LX	L	XL

1) a)

Number	Roman Numeral	Number of Sticks Used
1	I	1
2	II	2
3	III	3
4	IV	3
5	V	2
6	VI	3
7	VII	4
8	VIII	5
9	IX	3
10	X	2
11	XI	3

Number	Roman Numeral	Number of Sticks Used
12	XII	4
13	XIII	5
14	XIV	5
15	XV	4
16	XVI	5
19	XIX	5
20	XX	4
21	XXI	5
40	XL	4
41	XLI	5
50	L	2

Number	Roman Numeral	Number of Sticks Used
51	LI	3
52	LII	4
53	LIII	5
54	LIV	5
55	LV	4
56	LVI	5
59	LIX	5
60	LX	4
61	LXI	5

b)

Accept any explanation where children worked systematically and any explanation where children explain their reasoning. Here is an example answer:

If a number has three tens, I know that I will need too many sticks. This is because I need two sticks to make one X to show ten — so I would need at least six sticks to make three tens.

1)

Incorrect Roman Numeral	Explain the Mistake	Correct Roman Numeral
VXVII	The numerals show 5, 10 and 7 instead of 57. 50 should be represented with the letter L in Roman numerals.	LVII
LXI	XI has been written instead of IX. This means that 71 has been written instead of 69.	LIX
LXIV	IV has been written instead of VI. This means that 64 has been written instead of 66.	LXVI
LXXXVI	The number 86 has been written instead of 87. Another I is missing from the end of the number.	LXXXVII

2)

LVI			LIX
	LXVII	LXVIII	
	LXXVII	LXXVIII	
LXXXVI			LXXXIX

3)

Magnus has used more than three of the same symbol in a row. 90 is calculated as 100 − 10 = 90 so is represented as XC (ten less than 100). 4 is calculated as 5 − 1 = 4 and represented as IV (one less than five). The correct answer is XCIV.