

**Extra Practice 1****Lesson 1: Patterns in Charts**

1. Use a hundred chart. Choose a start number. Count on by 4s.  
Shade these numbers with one colour.  
Use the same start number. Count on by 6s.  
Shade these numbers with another colour.
  - a) Write the numbers that are shaded in both colours.
  - b) What is a rule for this pattern?
2. On 1-cm grid paper, make an 8-wide hundred chart with 8 columns and 13 rows. The last row will have only 4 numbers in it.
  - a) Find 3 different patterns in the 8-wide hundred chart.  
Record the first 6 terms in each pattern.
  - b) What is a rule for each pattern?

**Lesson 2: Exploring Number Patterns**

1. Find the pattern rule for each pattern.  
Write the next 3 terms for each pattern.
  - a) 1, 4, 7, 10, \_\_\_\_, \_\_\_\_, \_\_\_\_  
Rule:
  - b) 76, 65, 54, 43, \_\_\_\_, \_\_\_\_, \_\_\_\_  
Rule:
2. Complete each pattern.
  - a) 13, 17, 21, \_\_\_\_, 29, 33, 37
  - b) 91, 86, 81, 91, 86, \_\_\_\_, 91, 86, 81
  - c) 10, 11, 13, 16, \_\_\_\_, 25, 31

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## Extra Practice 2

### Lesson 3: Number Patterns with a Calculator

1. a) Choose a number. Multiply by 3 repeatedly.  
Record the first 8 terms.

\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

- b) Describe the pattern in the ones digits.  
c) What is the core of this pattern?

2. a) Choose a number greater than 200. Subtract 14 repeatedly.  
Record the first 10 terms.

\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_.

- b) What is the core of the pattern in the ones digits?

### Lesson 4: Equations Involving Addition

Use counters.

1. Complete the pattern.

$$11 + 0 = 11$$

$$10 + 1 = 11$$

$$9 + 2 = 11$$

$$8 + 3 = 11$$

How do you know when you have completed the pattern?

2. Find each missing number.

a)  $2 + \square = 9$

b)  $11 = 4 + \square$

c)  $17 = \square + 9$

d)  $13 + \square = 27$

3. Find two numbers that make this statement an equation.

$$4 + 14 = \square + \square$$

How many other ways can you do this?

How do you know you have found all the ways?

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## Extra Practice 3

### Lesson 5: Equations Involving Subtraction

Use counters to complete the questions.

1. Are the differences in each pair equal?

How do you know?

If the differences are equal, write an equation.

a)  $13 - 6$  and  $12 - 7$

b)  $14 - 7$  and  $15 - 6$

c)  $19 - 10$  and  $18 - 9$

d)  $25 - 15$  and  $21 - 11$

2. Find each missing number.

a)  $\square - 12 = 9$

b)  $\square - 4 = 11$

c)  $\square - 29 = 17$

d)  $23 - \square = 7$

3. Find the number that makes each statement an equation.

a)  $16 - 5 = 19 - \square$

b)  $26 - \square = 18 - 2$

c)  $18 - 13 = 13 - \square$

d)  $\square - 7 = 14 - 1$

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**Sample Answers**

**Extra Practice 1 – Master 1.18**

**Lesson 1**

1. a) The numbers make a diagonal position pattern.

b) Numbers will vary.

Student answer should show a hundred chart with the appropriate squares shaded.

2. a)

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	75	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				

There are many patterns. For example:

1, 9, 17, 25, 33, 41

1, 10, 19, 28, 37, 46

2, 9, 16, 23, 30, 37

b) Start at 1. Count on by 8.

Start at 1. Count on by 9.

Start at 2. Count on by 7.

**Lesson 2**

1. a) 1, 4, 7, 10, **13, 16, 19**

Rule: Start at 1, add 3 each time.

b) 76, 65, 54, 43, **32, 21, 10**

Rule: Start at 76, subtract 11 each time.

2. a) 25

b) 81

c) 20

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**Lesson 3**

Patterns may vary.

1. a) Start at 3: 3, 9, 27, 81, 243, 729, 2187, 6561.

b) There is a repeating pattern in the ones digits: 3, 9, 7, 1, 3, 9, 7, 1.

c) 3, 9, 7, 1

2. a) Choose 256: 256, 242, 228, 214, 200, 186, 172, 158, 144, 130

b) 6, 2, 8, 4, 0

**Lesson 4**

1.  $7 + 4 = 11$

$6 + 5 = 11$

$5 + 6 = 11$

$4 + 7 = 11$

$3 + 8 = 11$

$2 + 9 = 11$

$1 + 10 = 11$

$0 + 11 = 11$

I wrote the statements in order, taking away 1 from the first number each time and adding 1 to the second number, until I reached 0 for the first number and 11 for the second number.

2. a) 7

b) 7

c) 8

d) 14

3.  $0 + 18$ ;  $1 + 17$ ;  $2 + 16$ ;  $3 + 15$ ;  $4 + 14$ ;  $5 + 13$ ;  $6 + 12$ ;  $7 + 11$ ;  $8 + 10$ ;  $9 + 9$ ;

There are 10 ways to do this. I started with 0 as the first missing number. Then I used 1, 2, 3, and so on, until I reached 9 + 9. If I continued, I would get the same numbers as before, but in reverse order.

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**Lesson 5**

1. a) No. The differences are not equal.

b) No. The differences are not equal.

c) Yes.  $19 - 10 = 18 - 9$

d) Yes.  $25 - 15 = 21 - 11$

2. a) 21

b) 15

c) 46

d) 16

3. a) 8    b) 10    c) 8    d) 20