Think Academy US Online

SCAN ME

https://www.thethinkacademy.com/

CONTENTS

What is Think Academy? 1

Topic 1: Addition and Subtraction up to 1,000 6

Topic 2: Find the Pattern 16

Topic 3: Operation without Numbers 22

Topic 4: Perimeter 32

Topic 5: Intervals 39

Topic 6: Sum-Difference Problems 46

Answers 53

Think Academy US ONLINE

Pre-K & Lower Elementary Math Program

Think Academy Pre-K and Lower Elementary Math Program is designed for ages **3–8**, offering a structured, year-round learning path based on North American standards. It builds **seven core abilities**—calculation, logic, spatial sense, measurement and data, creativity, expression, and critical thinking—to form a solid foundation for future STEM success.

The long-term program includes Honors and Challenge tracks tailored to each child’ s math level. **Both follow the same framework** to strengthen **thinking skills** from PreK–G2. The Challenge track **adds competition training** for a smooth transition to upper-elementary math contests.

PreK：The Pre-K course has no level divisions. Before entering Kindergarten, students take placement assessments; combined with classroom performance and learning goals, this determines the most suitable course level.

Honors：Focuses on developing seven core abilities, fostering interest and confidence in math, and building potential for advanced study and future competitions.

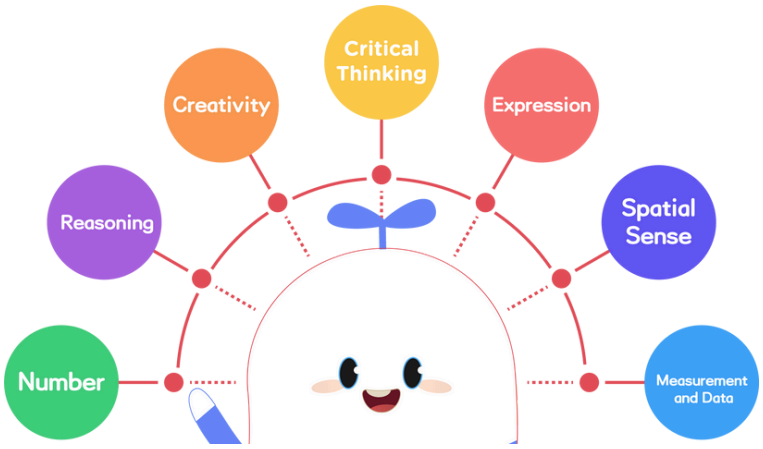
Challenge：Builds on the Honors curriculum with competition-focused enrichment aligned to the Math Kangaroo, encouraging children to explore and achieve in math contests from an early age.

幼小阶段学习规划				
班级	Pre-K	K	G1	G2
Honors 超前一年，稳固全A，直通顶班	Pre-K Think Ability	K Honors	G1 Honors	G2 Honors
Challenge 竞赛启蒙，加速两年，AP满贯		K Challenge	G1 Challenge	G2 Challenge
Competition 竞赛奠基，名师指导，晋级奥赛				G2 Pre-ACE

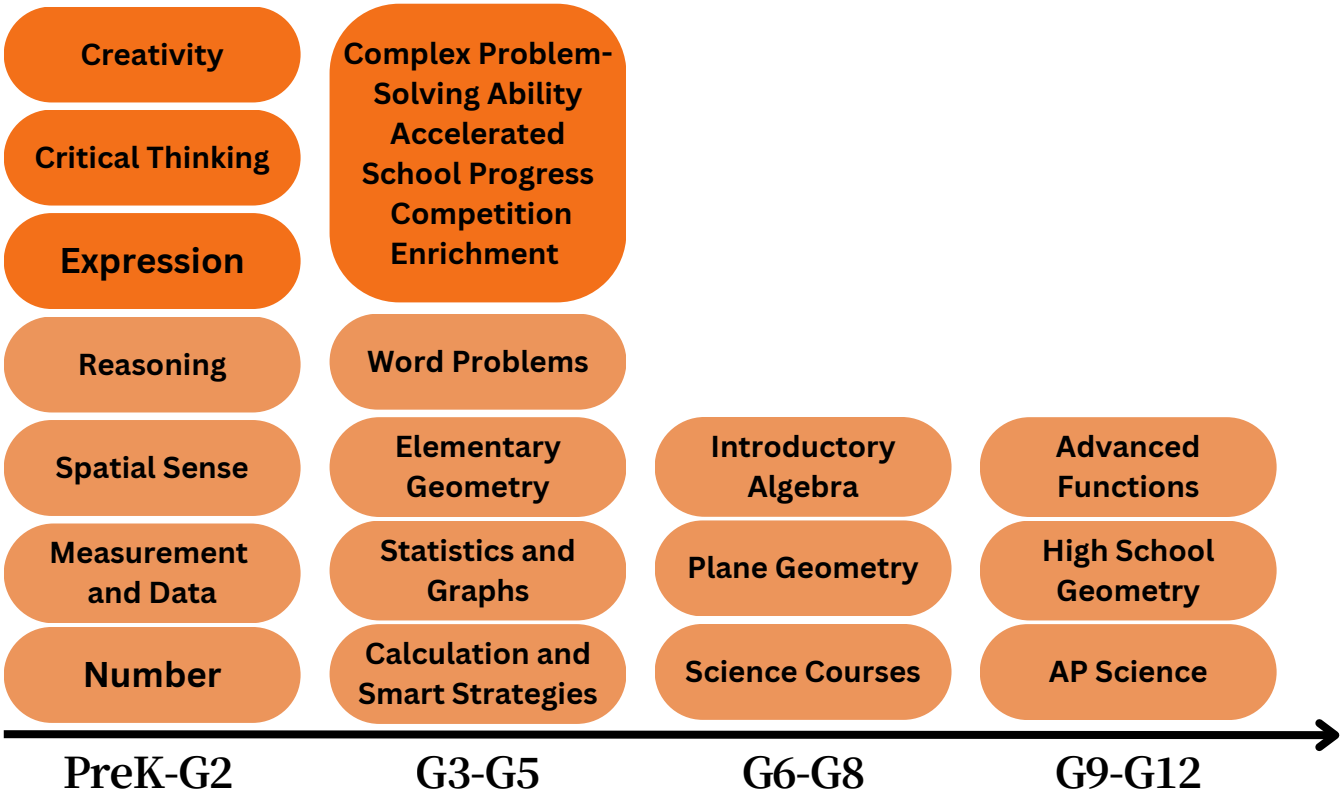
What Are the Seven Core Abilities?

3 Comprehensive Output Skills – Apply What You Learn

4 Core Math Skills – Spark Interest in Learning



- Ages 3–8 are the key period for developing children's thinking skills
- Through scenario-based learning, we protect curiosity
- Enhance the joy of exploration, and help children build and strengthen their thinking frameworks
- Cultivating active thinking and lifelong learning ability



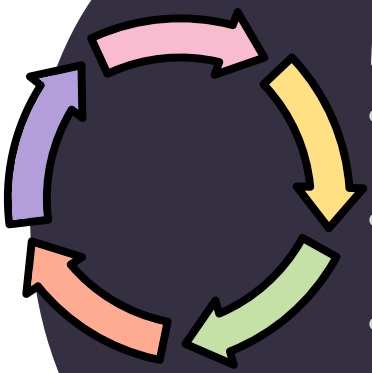
Think Academy US Online

Course Highlights

Clear Structure, Worry-Free for Parents

Personalized Learning Plans with Full Progress Tracking

- **Before Enrollment:** Teachers create **personalized study plans** based on each student’ s goals and ability
- **During Learning:** Teachers give **regular feedback and targeted advice**, helping parents track progress
- **Mid-Term & Final Evaluations**: **Parent meetings** and updated study plans ensure steady improvement



Weekly Learning Cycle to Ensure Steady Progress

- **Pre-Class Preparation: 15-minute preview** to review key concepts and prepare for new lessons
- **Homework: Assigned after each class**, with teacher feedback shared with parents
- **Office Hour: Free live sessions** to review and clarify difficult problems
- **Homework Review Videos:** Each homework question includes a **detailed video explanation** for easy review

Year-Round Learning Support

- **Year-round Parent App service** providing fast responses
- Through the Parent App, parents get **direct contact with teachers** for efficient communication and real-time progress updates
- Instant online homework help for **timely learning support**

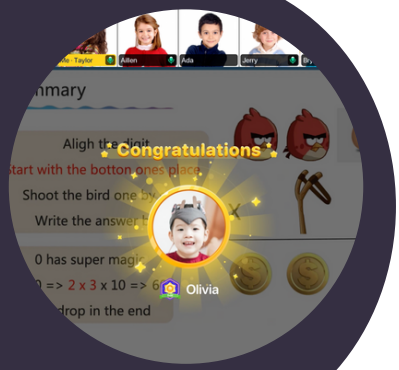
Think Academy US Online

Course Highlights

Happy Learning, Better Results

Thoughtfully Crafted Lessons Inspire a Love for Math

- **Interactive games and scenario-based teaching** make math fun and engaging
- **Gold coin reward system** lets students exchange coins for prizes, motivating them to complete learning tasks actively



Self-Developed Learning App Enhances Every Online Class

- **Think Academy learning app** enhances in-class interaction with hand-raising, polls, and group activities —**keeping students engaged every three minutes**
- Teachers **track progress in real time** for an effective learning experience

A Sense of Achievement Builds Intrinsic Motivation

- Students learn efficiently in class and get **full after-class support** with detailed homework videos and free weekly Office Hours.
- Students **gain higher grades, faster progress**. They are naturally motivated to put more effort in STEM learning and become **confident math learners**

Topic 1: Addition and Subtraction up to 1,000

(Recommended Learning Time: 4 days)

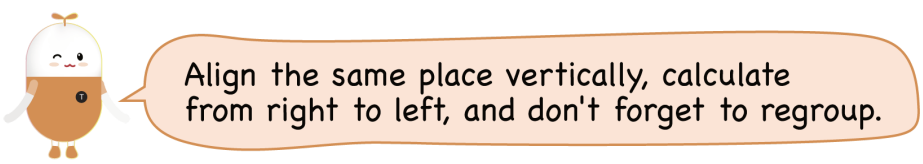
1 Solve the following problems using column addition or column subtraction.

(1) 283 + 167 = _____

$$\begin{array}{r} {\scriptstyle 1}\ {\scriptstyle 1} \\ 2\ 8\ 3 \\ +\ 1\ 6\ 7 \\ \hline 4\ 5\ 0 \end{array}$$

(2) 714 – 385 = _____

$$\begin{array}{r} {\scriptstyle 6}\ {\scriptstyle 1}{\scriptstyle 0} \\ \cancel{7}\ 1\ {}^{1}4 \\ -\ 3\ 8\ 5 \\ \hline 3\ 2\ 9 \end{array}$$


Align the same place vertically, calculate from right to left, and don't forget to regroup.

2 Add using column addition:

(1) 371 + 16 = _____

(2) 481 + 102 = _____

3 Add using column addition:

(1) 627 + 40 = _____

(2) 148 + 301 = _____

4 Add using column addition:

(1) 234 + 324 = _____

(2) 333 + 222 = _____

5 Calculate:

(1) 118 + 211 =

(2) 224 + 353 =

(3) $360 + 207 =$

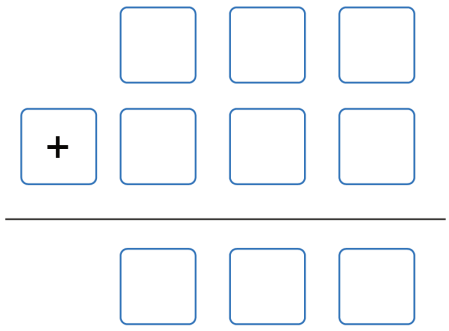
(4) $247 - 115 =$

(5) $498 - 272 =$

6 Solve the following questions using column addition.

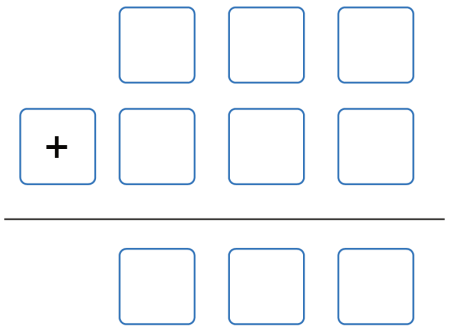
(1) $137 + 464 =$ _____

(2) $471 + 277 =$ _____



7 Solve the following questions using column addition.

(1) 386 + 149 = _____



(2) 345 + 289 = _____

8 Calculate:

(1) 67 + 54 =

(2) 178 + 87 =

(3) 376 + 78 =

(4) 146 + 498 =

9 Calculate:

(1) 324 + 57 =

(2) 262 + 188 =

(3) 499 + 224 =

10 Add using column addition:

(1) 172 + 45 =

(2) 254 + 139 =

11 Calculate:

(1) 216 + 149 =

(2) 115 + 685 =

12 Calculate:

(1) 672 + 219 =

(2) 564 + 116 =

(3) 773 + 168 =

13 Subtract using column subtraction:

(1) $56 - 40 =$ _____

(2) $243 - 13 =$ _____

(3) $474 - 141 =$ _____

14 Calculate:

(1) $384 - 87 =$

(2) $731 - 557 =$

15 Calculate:

(1) 118 – 99 =

(2) 939 – 481 =

16 Calculate:

(1) 100 – 47 =

(2) 202 – 94 =

(3) 1000 – 481 =

17 Calculate:

(1) $100 - 78 =$

(2) $306 - 67 =$

(3) $1000 - 876 =$

18 Fill in the blanks.

(1)
$$\begin{array}{r} 1\ 5\ 8 \\ +\ 5\ 7\ 6 \\ \hline \square\square\ 4 \end{array}$$

(2)
$$\begin{array}{r} 7\ 3\ 6 \\ -\ \square\square\ 8 \\ \hline 2\ 7\ 8 \end{array}$$

19 Fill in the blanks.

(1)

	6	7	4
+	1	5	8
			2

(2)

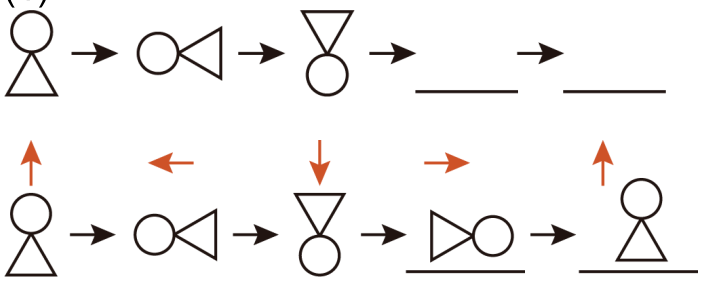
	8	1	6
-			7
	5	3	9

Topic 2: Find the Pattern

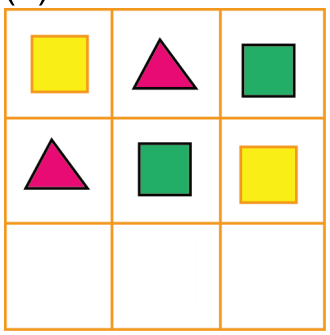
(Recommended Learning Time: 3 days)

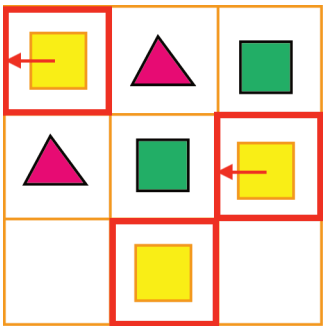
1 According to the patterns, fill in the blanks.

(1)



(2)

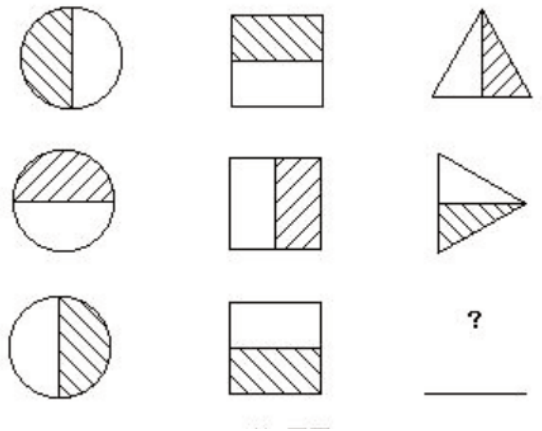




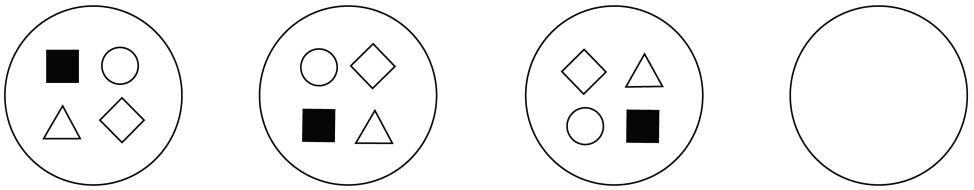
Starting from the first row, each shape moves one gird to the left each time. When the shape is in the leftmost grid, it will move to the rightmost grid next time.

Pattern means that something changes in a regular way. The items may change in quantity, rotating, color, direction...

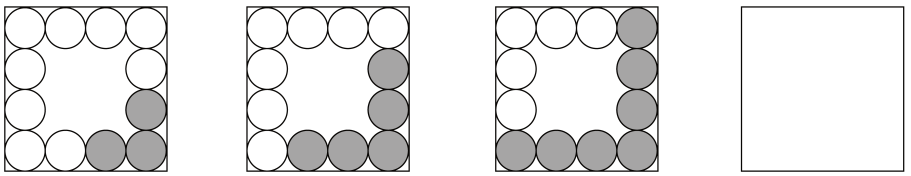
2 According to the pattern, draw the figure in the blank.



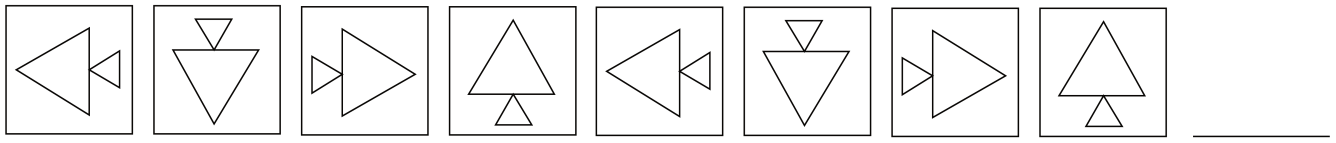
3 According to the pattern, complete the last figure.



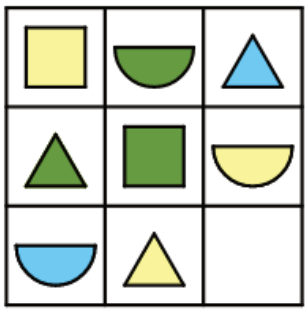
4 According to the pattern, complete the last figure.



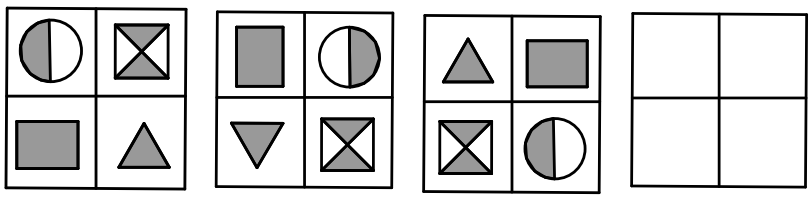
5 According to the pattern, draw the next figure in the blank.



6 According to the pattern, draw the figure in the blank.



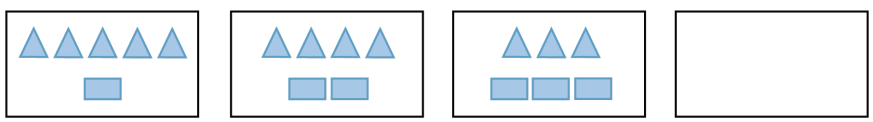
7 According to the pattern, draw the figures in the blanks.



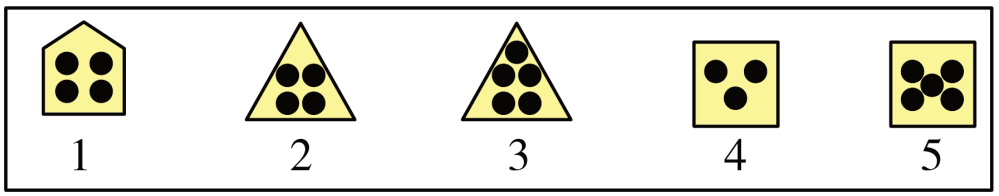
8 Find the patterns and draw the next figures.

(1) △ ○ □□△ ○ □□ ____ ____ ____ ____

(2)



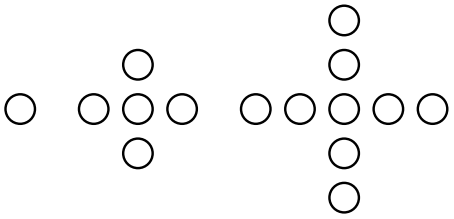
9 Find the pattern and choose the figure that should be on "?".

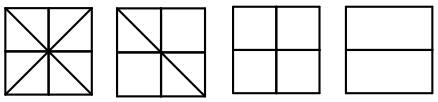


10 Find the pattern and draw the next figures.

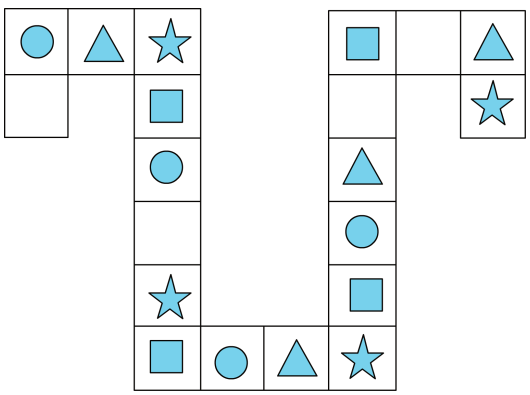
(1) ☆☆△☆☆△ ____ ____ ____ .

(2) □□△○○△□□△○○△ □□△ ____ ____ ____ .

(3)  ____ .

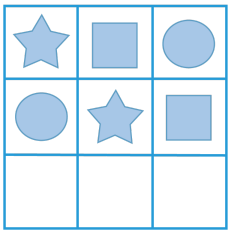
(4)  ____ .

11 Find the pattern and draw figures in the blanks.



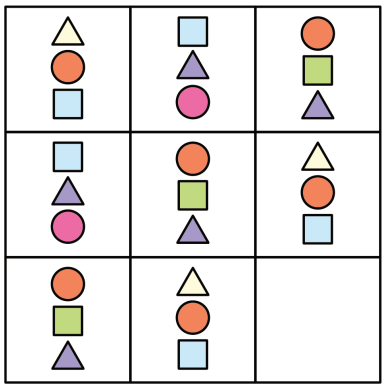
12 Find the pattern and fill in the blanks.

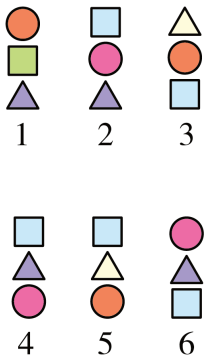
(1)



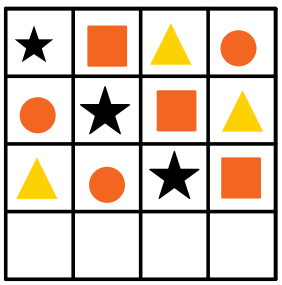
(2) *ABCDE* *BCDEA* *CDEAB* _____

13 Find the pattern and choose the figure that should be in the blank.



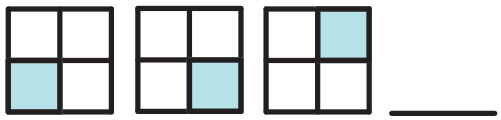


14 Find the pattern and draw figures in the blanks.

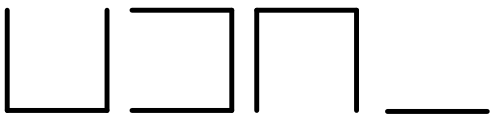


15 Find the pattern and draw the next figures.

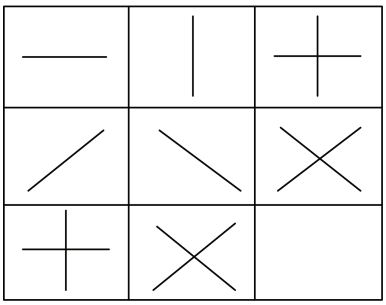
(1)



(2)

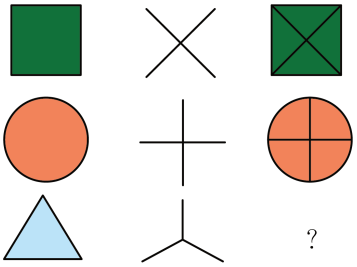


16 Find the pattern and draw the next figure.



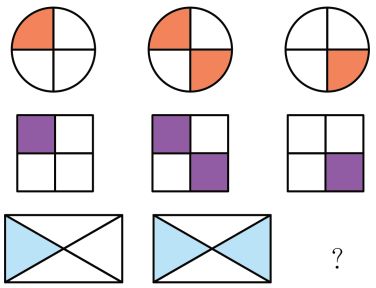
17 Find the pattern and draw figures that should be on "?".

(1)



(1)

(2)



(2)

Topic 3: Operation without Numbers

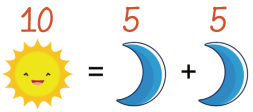
(Recommended Learning Time: 3 days)

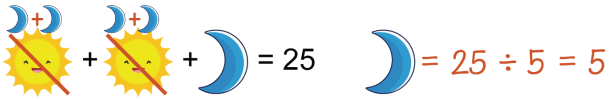
1 Find the number each shape represents below! (The same shapes represent the same numbers, and different shapes represent different numbers.)

(1)

= _____ = _____

10 5 5





= 25 ÷ 5 = 5

= 10 = 5

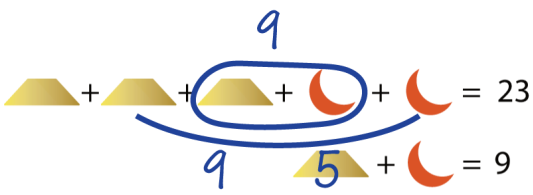
(2)

= 23

= 9

= _____

= _____



▲ = 5

● = 4

▲ + 9 + 9 = 23

▲ = 23 − 18 = 5

● = 9 − 5 = 4

The key point:
After substitution, there is only one kind of shapes in the equation.

2 Find the number each shape represents below! (The same shapes represent the same numbers, and different shapes represent different numbers.)

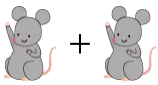
♥ + ♥ = 6

● + ♥ = 8

♥ = _____

● = _____

3 Find the number each shape represents below! (The same shapes represent the same numbers, and different shapes represent different numbers.)

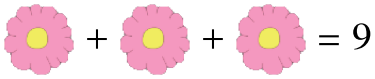
 = 26

= 43

= _____

= _____

4 Find the number each shape represents below! (The same shapes represent the same numbers, and different shapes represent different numbers.)

 = 9

= 6

= 6

= _____

= _____

= _____

5 Find the number each shape represents below! (The same shapes represent the same numbers, and different shapes represent different numbers.)

+ + = 18

+ = 10

= _____ = _____

6 Fill in the blanks.

(1) ● − ■ =9

6+ ■ =8

● = ( )

■ = ( )

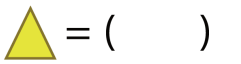
(2) ★ + ★ =8

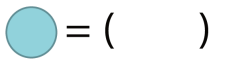
▲ + ★ =9

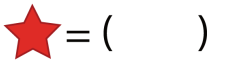
★ = ( )

▲ = ( )

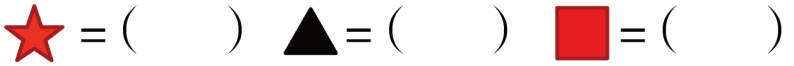
7 Fill in the blanks. (The same shape represents the same number, and different shapes represent different numbers.)







8 Fill in the blanks.



9 Find the number each shape represents below! (The same shapes represent the same numbers, and different shapes represent different numbers.)

= 34

+ 14 =

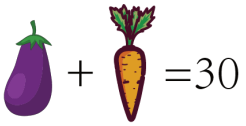
14 + = 80

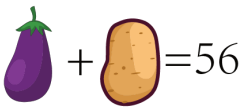
= _____

= _____

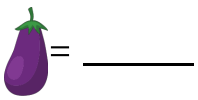
= _____

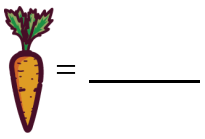
10 Find the number each shape represents below! (The same shapes represent the same numbers, and different shapes represent different numbers.)

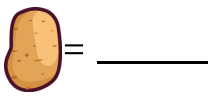
 =30

 =56

-7=43

 = _____

 = _____

 = _____

11 A monkey weighs 16 kg. According to the following figures, how many kilograms does a rabbit weigh? How many kilograms does a dog weigh?

=

=

= ( ) = ( )

12 Fill in the blanks.

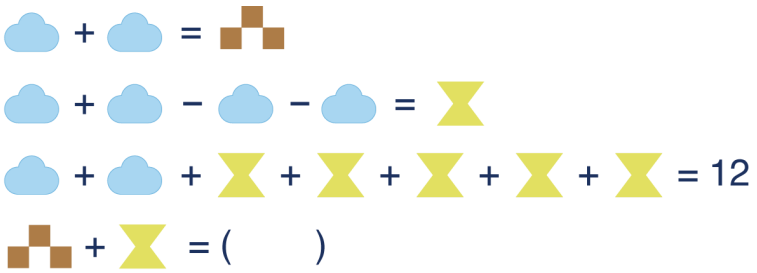
+ = 12;

= + + 。

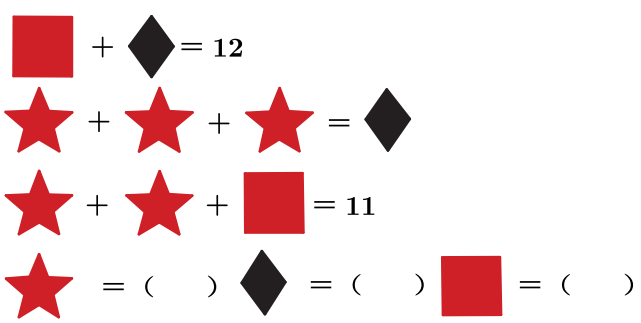
= ( )

= ( )

13 Fill in the blanks. (The same shape represents the same number, and different shapes represent different numbers.)

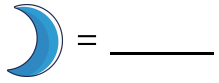


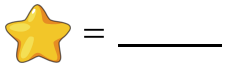
14 Fill in the blanks.



15 Find the number each shape represents below! (The same shapes represent the same numbers, and different shapes represent different numbers.)

= 15

 = _____

 = _____

16 Fill in the blanks. (The same shape represents the same number, and the different shapes represent different numbers.)

(1)

= 12

=

= ( ) = ( )

(2)

= ( ) = ( )

17 Fill in the blanks. (The same shape represents the same number, and different shapes represent different numbers.)

(1)

= ( ) = ( )

(2)

= ( ) = ( )

18 Fill in the blanks. (The same shape represents the same number, and different shapes represent different numbers.)

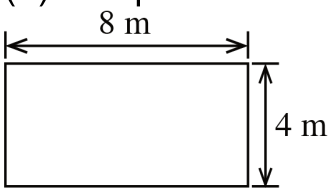
= ( )

= ( )

Topic 4: Perimeter

(Recommended Learning Time: 3 days)

1 (1) The perimeter of the rectangle is _____ m.

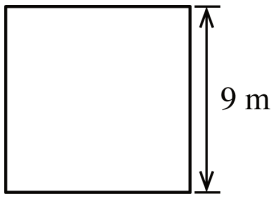


$8 \times 2 + 4 \times 2 = 24$

or $(8 + 4) \times 2 = 24$

The perimeter of rectangle is 24 m.

(2) The perimeter of the square is _____ m.

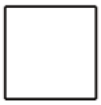
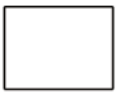
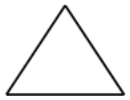


$9 \times 4 = 36$

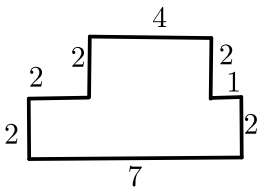
The perimeter of square is 36 m.

Perimeter is the distance around a closed plane shape.
Perimeter of rectangle
= length × 2 + width × 2
= (length +width) × 2.
Perimeter of square = side length × 4.

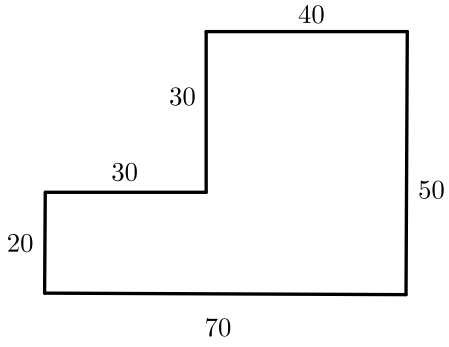
2 Which of the following figures does not have a perimeter?

A.  B.  C.  D.

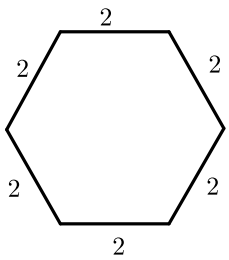
3 The perimeter of the figure below is _____ .



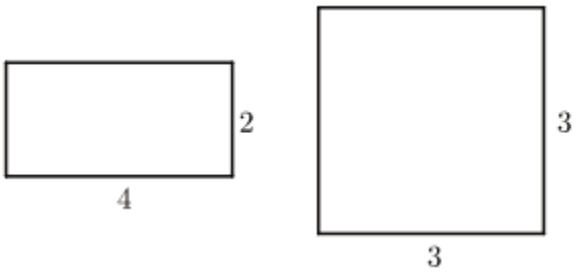
4 The perimeter of the figure below is _____ .



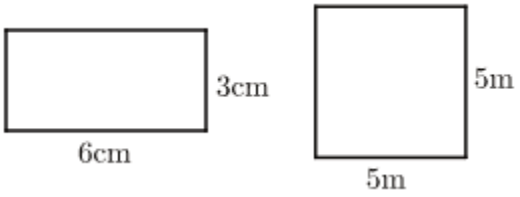
5 The perimeter of the figure below is _____ .



6 The perimeter of the rectangle is _____ . The perimeter of the square is _____ .

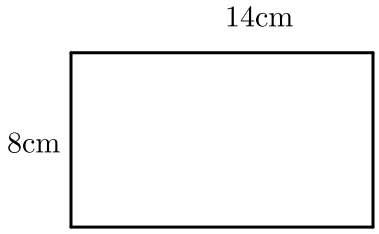


7 The perimeter of the rectangle is _____ cm. The perimeter of the square is _____ m.

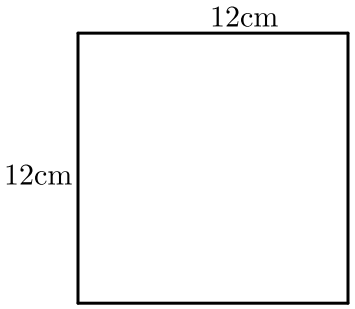


8 Calculate:

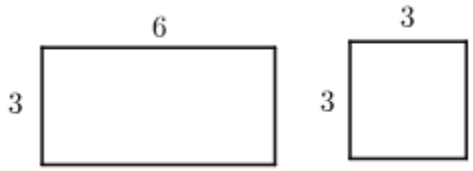
(1) The perimeter of the rectangle below is _____ cm.



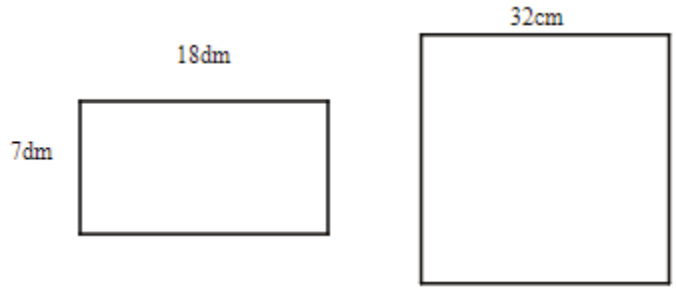
(2) The perimeter of the square below is _____ cm.



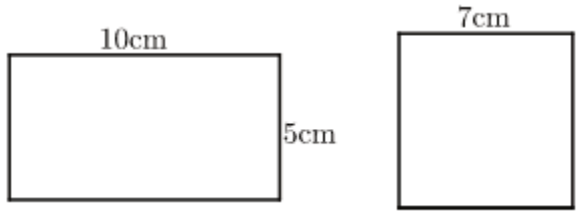
9 The perimeter of the rectangle is _____ . The perimeter of the square is _____ .



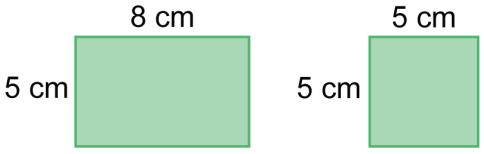
10 The perimeter of the rectangle is _____ dm. The perimeter of the square is _____ cm.



11 The perimeter of the rectangle is _____ cm. The perimeter of the square is _____ cm.

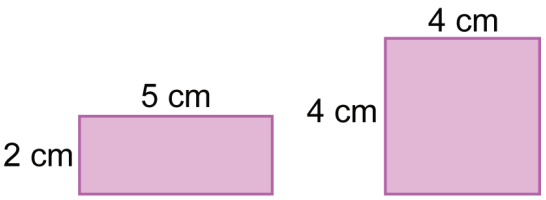


12 The perimeter of the rectangle is _____ cm. The perimeter of the square is _____ cm.

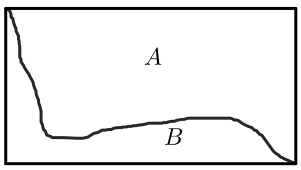


13 The perimeter of the rectangle is _____ . The perimeter of the square is _____ .

14 The perimeter of the rectangle is _____ cm. The perimeter of the square is _____ cm.

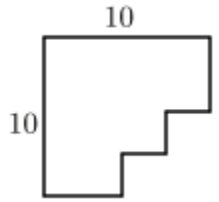


15 Which statement below is right?

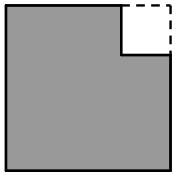


A. Figure A and figure B has the same perimeter.
B. Figure A's perimeter is longer.
C. Figure B's perimeter is longer.

16 The perimeter of the figure below is _____ .

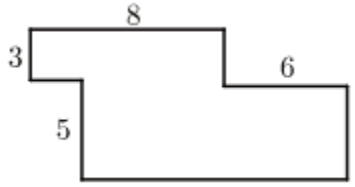


17 Cut a small square out of a large square card. Which statement is right?



A. The perimeter of the large square doesn't change.
B. The perimeter of the large square decreases.
C. The perimeter of the large square increases.

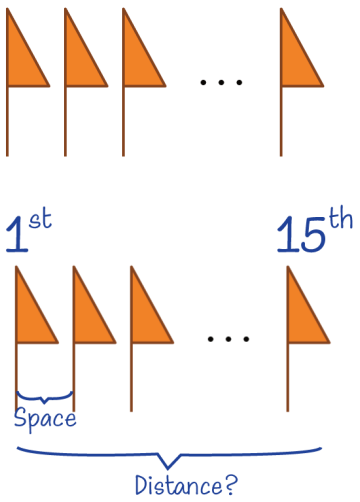
18 The perimeter of the figure below is _____ .



Topic 5: Intervals

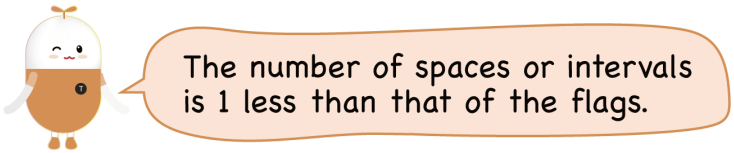
(Recommended Learning Time: 4 days)

1 James puts 15 flags every 2 m on one side of the road. The width of each flag is negligible. The distance between the first flag and the 15th flag is _____ m.



Space: 15 − 1 = 14

Distance: 14 × 2 = 28



2 How many spaces are there between the fingers of one hand?

3 One piece of wood can be cut into _____ sections with 3 cuts.
One piece of wood can be cut into _____ sections with 6 cuts.
One piece of wood can be cut into _____ sections with 11 cuts.
(Cut the wood in the same way as shown below.)

4 There is a road in a park. If workers plant 17 trees on one side of the road as shown below. The road is divided into _____ segments.

5 There is a 420-meter road in a park. If workers plug 22 flags on one side of the road, and both ends have flags plugged, the road is divided into _____ segments.

6 If workers plant 34 trees on one side of the road as shown below. The road is divided into _____ segments.

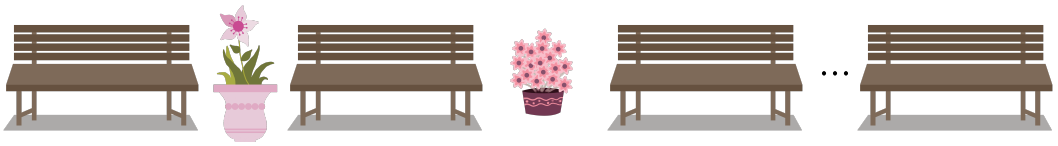
7 There is a 100-meter road in a park. If workers plant 10 trees on one side of the road, and both ends have trees planted, the road is divided into _____ segments.

8 There is a 230-meter road in a park. If workers plant 17 trees on one side of the road, and both ends have trees planted, the road is divided into _____ segments.

9 There is a 220-meter road in a park. If workers plant 22 trees on one side of the road, and both ends have trees planted, the road is divided into _____ segments.

10 Robert and his friends are playing games. All children stand in a row. If Robert puts a chair between every two friends and he puts 13 chairs in total, there are _____ friends playing games.

11 Workers put some benches on one side of a road. They put one pot of flowers between every two benches, and put 35 pots of flowers in total. They put _____ benches.



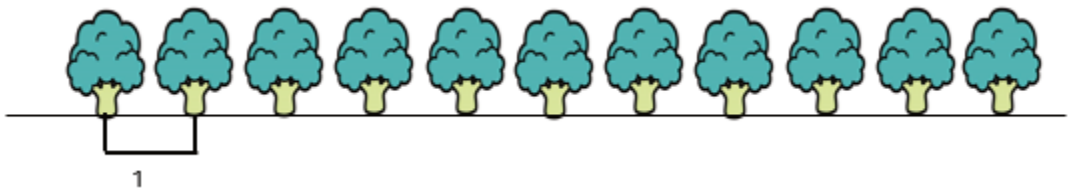
12 How many times does it take to cut a piece of wood into 3 sections? If each cut takes 3 minutes, how long will it take?

13 How long does it take to cut 1 piece of wood into 5 sections if each cut takes 2 minutes? (Cut the wood in the same way as shown below.)

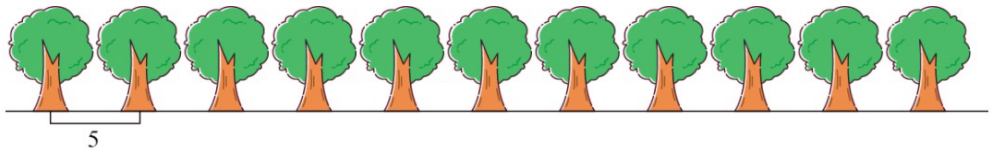
14 It needs _____ cuts to cut 1 piece of wood into 11 sections. If one cut takes 2 minutes, _____ minutes are needed. (Cut the wood in the same way as shown below.)

15 A piece of wood is 32 meters long. If each cut takes 3 minutes, how long will it take to cut the wood into pieces of 4 meters long? (Cut the wood in the same way as shown below.)

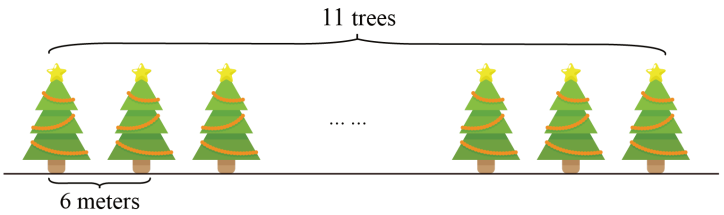
16 Tom plants trees on one side of the road. He plants 1 tree every 1 meter, and plants 11 trees in total. How long is the road?



17 Plant 1 tree every 5 meters on one side of the road, and 11 trees are planted. How long is the road?



18 Plant 1 tree every 6 meters on one side of the road as shown below, and 11 trees are planted. How long is the road?

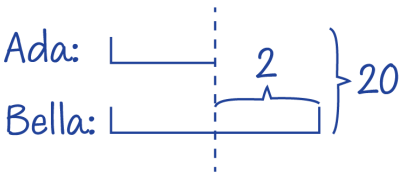


19 Lisa puts 25 pots of flowers every 2 meters on one side of a road. The width of the pot is negligible. It is _____ meters long from the 1st pot of flowers to the 25th pot of flowers?

Topic 6: Sum-Difference Problems

(Recommended Learning Time: 4 days)

1 Bella and Ada have 20 books in total. Bella has 2 more books than Ada, how many books does Bella have? How about Ada?



Subtract 2 from 20 to make Ada and Bella have the same, and the new total amount is: 20 - 2 = 18.
Ada has 18 ÷ 2 = 9 books.
Bella has 9 + 2 = 11 books.

Draw line segments;
Subtract the extra to make the number of books of two people be the same.

2 Bob and Alice have 16 books in total. Bob has 2 more books than Alice, how many books does Bob have? How about Alice?

3 Kevin and Mary buy 24 boxes in total. Kevin buys 6 more boxes than Mary, how many boxes does Kevin buy? How about Mary?

4 Joy and Ross planted 30 trees in total. Joy planted 8 fewer trees than Ross, how many trees did Joy plant? How about Ross?

5 John and Nancy brought 12 apples in total. John brought 4 fewer apples than Nancy, how many apples did John bring? How about Nancy?

6 James and David make 26 pies in total. James makes 6 more pies than David, how many pies does James make? How about David?

7 Kevin and Mary buy 21 boxes in total. Kevin buys 5 more boxes than Mary, how many boxes does Kevin buy? How about Mary?

8 Bob and Alice have 18 books in total. Bob has 4 more books than Alice, how many books does Bob have? How about Alice?

9 John and Nancy brought 16 apples in total. John brought 2 fewer apples than Nancy, how many apples did John bring? How about Nancy?

10 Joy and Ross planted 32 trees in total. Joy planted 10 fewer trees than Ross, how many trees did Joy plant? How about Ross?

11 James and David make 19 pies in total. James makes 3 more pies than David, how many pies does James make? How about David?

12 There are 68 balls in total. Betty has 20 more balls than Elena, how many balls does Elena have? How about Betty?

13 There are 93 balls in total. Betty has 21 more balls than Elena, how many balls does Elena have? How about Betty?

14 Tom and Jerry buy 32 books in total. Tom buys 14 more books than Jerry, how many books does Tom buy? How about Jerry?

15 Joy and Ross planted 78 trees in total. Joy planted 8 fewer trees than Ross, how many trees did Joy plant? How about Ross?

16 James and David make 48 pies in total. James makes 6 more pies than David, how many pies does James make? How about David?

17 The sum of Sherry and her sister's age is 24. Sherry is 8 years older than her sister. How old are Sherry and her sister, respectively?

18 There are 16 chickens and ducks in total in the farm. There are 2 more ducks than chickens. How many ducks and chickens are there in the farm, respectively ?

19 There is a 12-meter pipe. We want to cut it into two sections, so that the first section is 2 meters shorter than the second section. How long are the two sections, respectively?

20 There are 260 peach trees and pear trees in the orchard. There are 20 more peach trees than pear trees. How many peach trees and pear trees are there, respectively?

Answers

Topic 1: Addition and Subtraction up to 1,000

(Recommended Learning Time: 4 days)

1. N/A
2. (1) 387
   (2) 583
3. (1) 667
   (2) 449
4. (1) 558
   (2) 555
5. (1) 329
   (2) 577
   (3) 567
   (4) 132
   (5) 226
6. (1) 601
   (2) 748
7. (1) 535,

	1	1	
	3	8	6
+	1	4	9
	5	3	5

(2) 634,

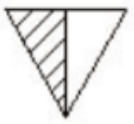
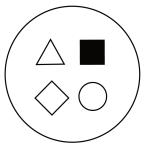
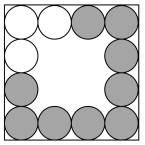
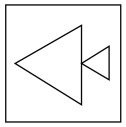
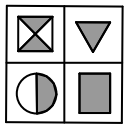
	1	1	
	3	4	5
+	2	8	9
	6	3	4

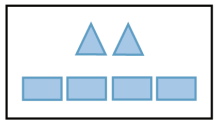
8. (1) 121
   (2) 265
   (3) 454
   (4) 644
9. (1) 381
   (2) 450
   (3) 723

10. (1) 217
    (2) 393
11. (1) 365
    (2) 800
12. (1) 891
    (2) 680
    (3) 941
13. (1) 16
    (2) 230
    (3) 333
14. (1) 297
    (2) 174
15. (1) 19
    (2) 458
16. (1) 53
    (2) 108
    (3) 519
17. (1) 22
    (2) 239
    (3) 124
18. (1) 7; 3.
    (2) 4; 5.
19. (1) 8; 3.
    (2) 2; 7.

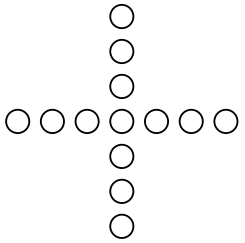
Topic 2: Find the Pattern

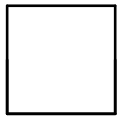
(Recommended Learning Time: 3 days)

1. N/A
2. 
3. 
4. 
5. 
6.
7. 
8. (1) △ ◯ □□

   (2) 
9. 3
10. (1) ☆ ; ☆ ; △

    (2) ○ ; ○ ; △

    (3) 

    (4) 

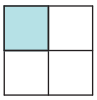
11. (from left to right)

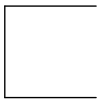
12. (1) □○☆

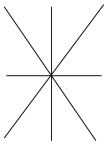
    (2) *DEABC*

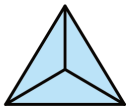
13. 4

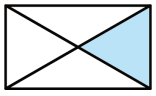
14.

15. (1) 

    (2) 

16. 

17. (1) (1) 

    (2) (2) 

Topic 3: Operation without Numbers

(Recommended Learning Time: 3 days)

1. N/A
2. 3 ; 5
3. 15 ; 13
4. 3; 2; 1
5. 6 ; 4
6.
7. 9; 6; 7
8. star = 5, triangle = 10, square = 20.
9. 66 ; 26 ; 4
10. 6 ; 24 ; 50
11. rabbit = 8 kg, dog = 4 kg.
12. blue flower = 3, red flower = 9.
13. 12
14. one star = 1
    one diamond = 3
    one square = 9
15. 3; 12
16. (1) 8; 4
    (2) 32; 8
17. (1) 8; 5
    (2) 15; 5
18. 3; 4

Topic 4: Perimeter

(Recommended Learning Time: 3 days)

1. N/A
2. D
3. 22
4. 240
5. 12
6. 12 ; 12
7. 18 ; 20
8. (1) 44
   (2) 48
9. 18 ; 12
10. 50 ; 128
11. 30 ; 28
12. 26 ; 20
13. 38 ; 24
14. 14 ; 16
15. A
16. 40
17. A
18. 44

Topic 5: Intervals

(Recommended Learning Time: 4 days)

1. N/A
2. 4
3. 4 ; 7 ; 12
4. 16
5. 21
6. 33
7. 9
8. 16
9. 21
10. 14
11. 36
12. 2 times, 6 minutes
13. 8
14. 10 ; 20
15. 21
16. 10 meters
17. 50
18. 60
19. 48

Topic 6: Sum-Difference Problems

(Recommended Learning Time: 4 days)

1. N/A
2. $9; 7$.
3. $15; 9$.
4. $11; 19$.
5. $4; 8$.
6. $16; 10$.
7. $13; 8$.
8. $11; 7$.
9. $7; 9$.
10. $11; 21$.
11. $11; 8$.
12. $24; 44$
13. $36; 57$
14. $23; 9$.
15. $35; 43$
16. $27; 21$
17. Sherry is 16 years old, her sister is 8 years old.
18. There are 9 ducks and 7 chickens.
19. The first section is 5 meters, and the second section is 7 meters.
20. There are 140 peach trees and 120 pear trees.

Think Academy US Online

SCAN ME

https://www.thethinkacademy.com/