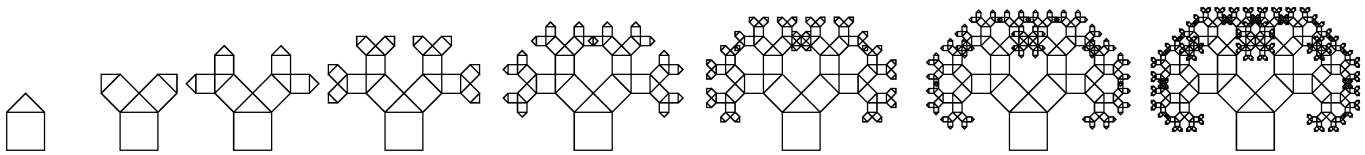

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MATH PROGRAM – GRADE 1

LEARN REAL MATH IN AN ORGANIZED WAY

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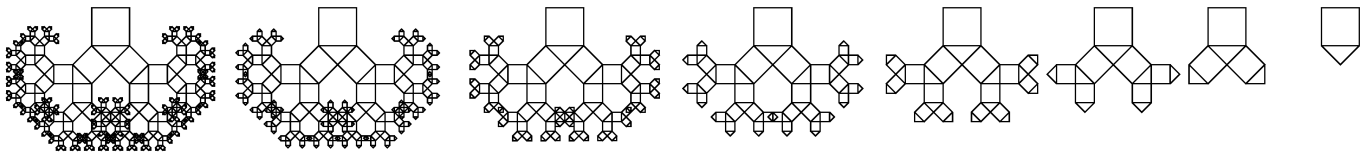
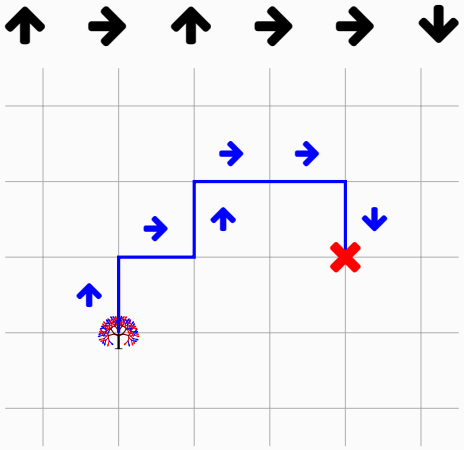
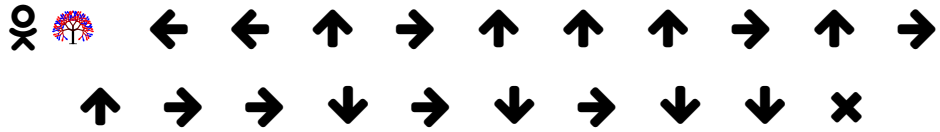


Activity: Find the Treasure

Example 1: Start at . Follow these steps to get to the treasure:

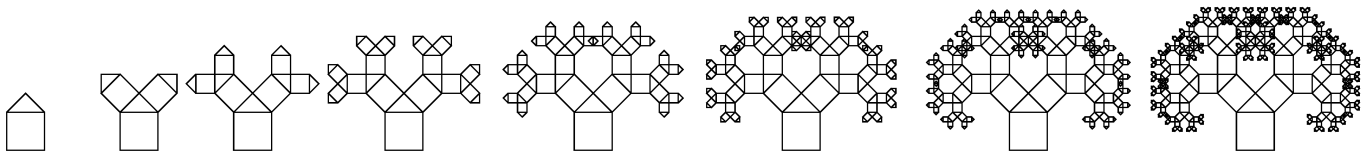


You are Captain With Some Ugly Long Confusing But Very Scary Name . A long time ago you hid your treasure on a deserted island and left the following instructions:



Can you find the treasure today?

Is there a simpler way to get to the treasure?



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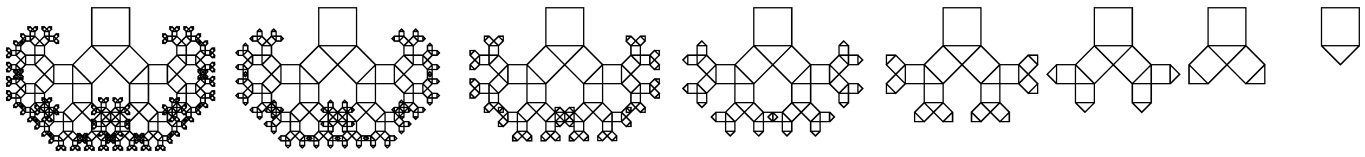
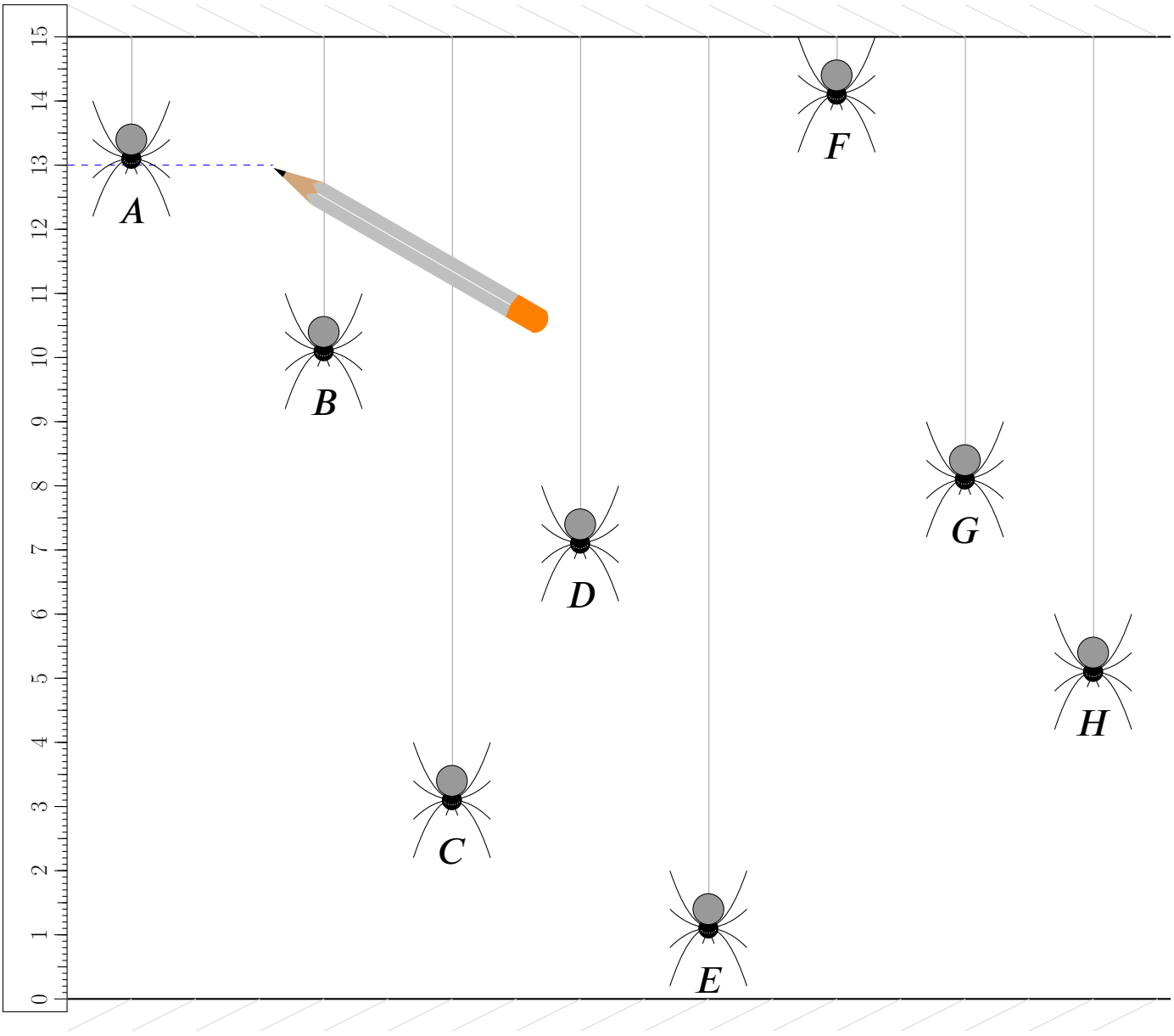
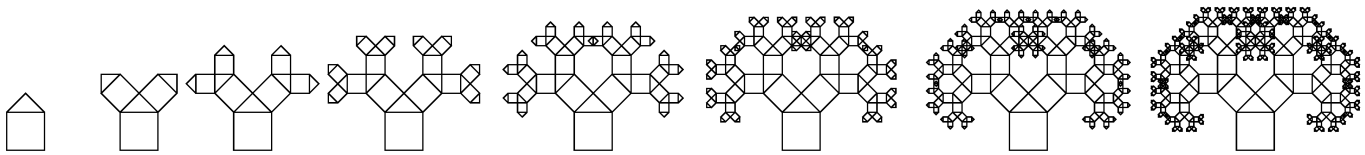


Activity: Distance Between Spiders





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MATH PROGRAM – GRADE 2

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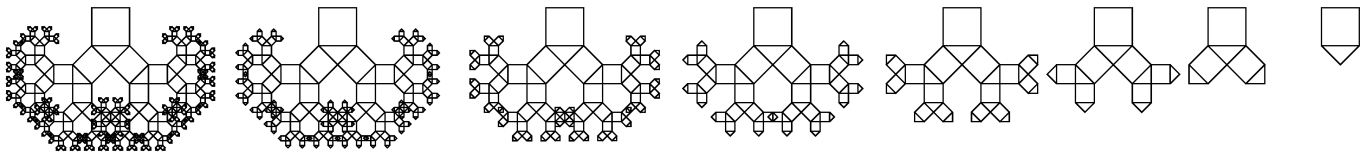


Expressions 6

Only values of the same type can be added or subtracted.

Example 1: Collect like terms.

$$2\,\text{🦆} + 4\,\text{🕷} + 5\,\text{🦆} + 6\,\text{🕷} = 7\,\text{🦆} + 10\,\text{🕷}$$

Practice 1: Collect like terms.

a) $4\,\text{🦆} + 10\,\text{🕷} + 5\,\text{🦆} + 12\,\text{🕷} = \_\_\_\_\_\,\text{🦆} + \_\_\_\_\_\,\text{🕷}$

b) $-3\,\text{🦆} + 8\,\text{🕷} + 5\,\text{🦆} + 7\,\text{🕷} = \_\_\_\_\_\,\text{🦆} + \_\_\_\_\_\,\text{🕷}$

c) $2\,\text{🦆} + 8\,\text{🕷} + 6\,\text{🦆} + 9\,\text{🕷} = \_\_\_\_\_\,\text{🦆} + \_\_\_\_\_\,\text{🕷}$

d) $3\,\text{🦆} + 5\,\text{🕷} + 3\,\text{🦆} + 5\,\text{🕷} = \_\_\_\_\_\,\text{🦆} + \_\_\_\_\_\,\text{🕷}$

e) $99\,\text{🦆} + 18\,\text{🕷} + 2\,\text{🦆} + 23\,\text{🕷} = \_\_\_\_\_\,\text{🦆} + \_\_\_\_\_\,\text{🕷}$

Practice 2: Collect like terms.

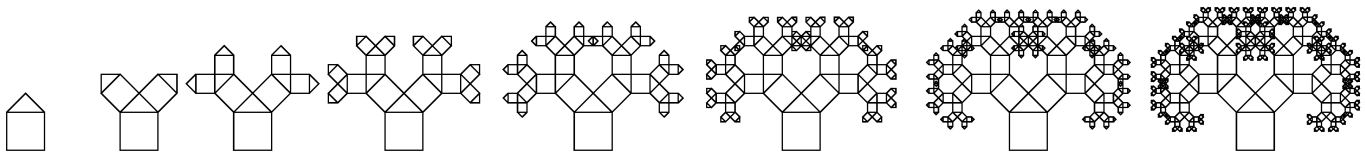
a) $6\,x + 3\,y + 2\,x + 5\,y = \_\_\_\_\_\,x + \_\_\_\_\_\,y$

b) $4\,x + 9\,y + 5\,x + 7\,y = \_\_\_\_\_\,x + \_\_\_\_\_\,y$

c) $-2\,x + 7\,y + 5\,x + 9\,y = \_\_\_\_\_\,x + \_\_\_\_\_\,y$

d) $10\,x + 10\,y + 5\,x + 5\,y = \_\_\_\_\_\,x + \_\_\_\_\_\,y$

e) $19\,x + 18\,y + 11\,x + 13\,y = \_\_\_\_\_\,x + \_\_\_\_\_\,y$



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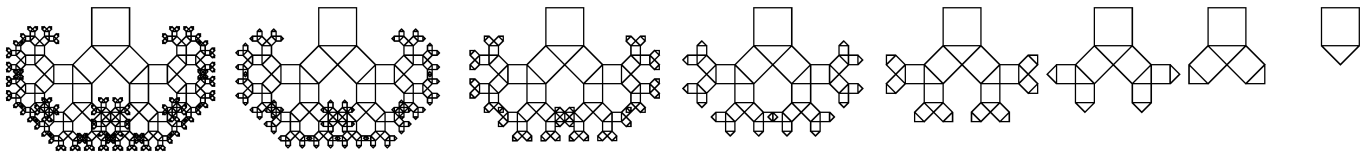


Problem 1: Calculate.

$926 + 635$	$590 + 55$	$701 + 912$	$453 + 67$	$784 + 231$	$583 + 459$
$389 - 323$	$937 - 148$	$308 - 155$	$822 - 653$	$314 - 278$	$953 - 886$

Problem 2: Calculate.

a) $7 \cdot 7 =$ b) $6 \cdot 5 =$ c) $9 \cdot 4 =$ d) $5 \cdot 8 =$

e) $6 \cdot 3 =$ f) $4 \cdot 10 =$ g) $40 \div 10 =$ h) $18 \div 6 =$

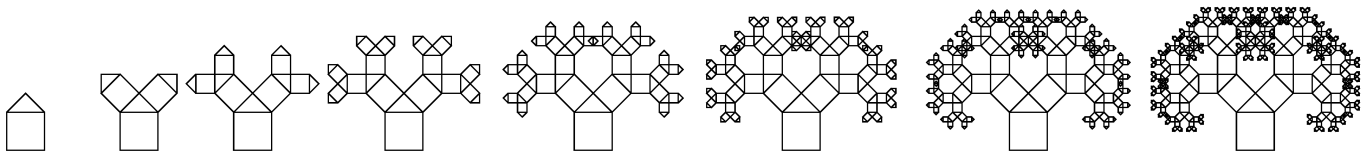
i) $81 \div 9 =$ j) $14 \div 2 =$ k) $\frac{42}{6} =$ l) $\frac{15}{5} =$

Problem 3: Calculate.

a) $9 + 9 \cdot 5 =$ c) $7 + 0 \cdot 8 - 2 =$

b) $5 + 42 \div 6 =$ d) $2 + 7 \div 7 + 1 =$

Problem 4: Cheryl has 10 pencils. Kyle has 7 times as many pencils. How many pencils does Kyle have?



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MATH PROGRAM – GRADE 3

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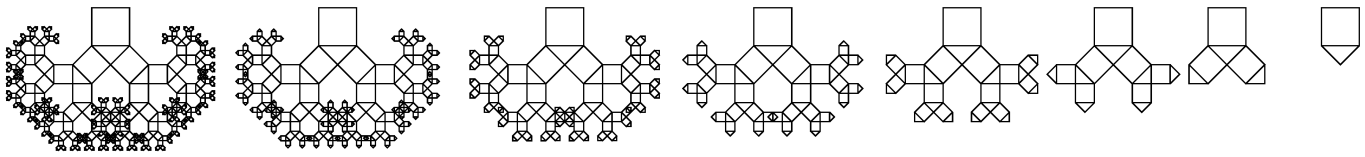
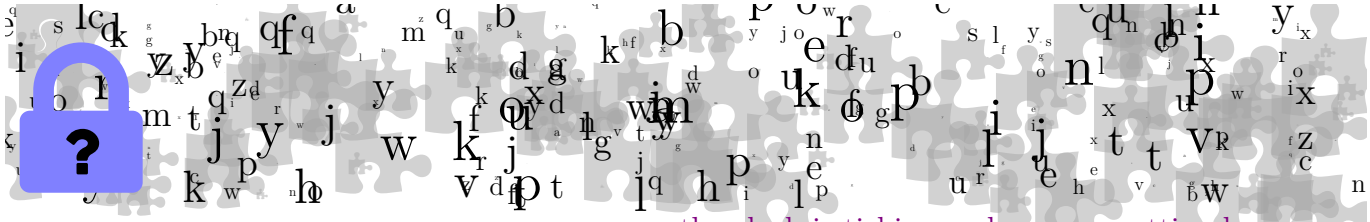


Escape Room - Expressions

An evil scientist captured you... ... you need a password that unlocks the room ...



... the clock is ticking and you are getting hungry ...

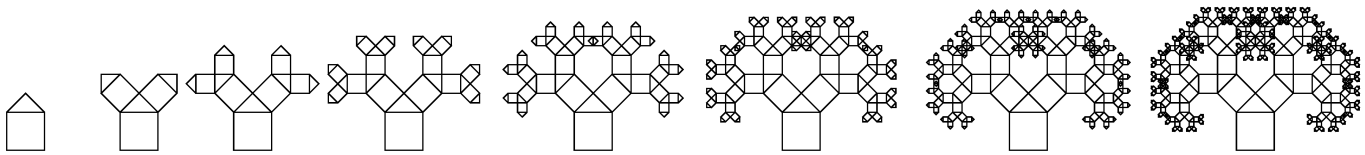
Solve the problem in the Start box. Look for your answer in the upper left corner of the remaining boxes to find out which problem to solve next. Repeat until you reach the end box.
Important: Keep track of the order of the letters in which you solve the problems.

START (A) When $x = 1$, find: $8 + x$ 1st	−2 (E) When $x = 2$, find: $x + 2$	−4 (D) When $x = 3$, find: $x + 2$	9 (M) When $x = 4$, find: $2x + 2$
3 (V) When $x = 1$, find: $3x - 1$	8 (R) When $x = 5$, find: $1 + (x + 1)$	6 (H) When $x = 1$, find: $2 - (x + 1)$	15 (T) When $x = 2$, find: $3(x - 1)$
7 (K) When $x = 1$, find: $x - 2$	10 (R) When $x = -1$, find: $x - 1$	−1 (L) When $x = 14$, find: $20 - x$	0 (I) When $x = 4$, find: $10 - (x + 10)$
2 (S) When $x = 1$, find: $x \cdot (x + 7)$	14 (O) When $x = 2$, find: $30 \div x$	4 (Z) When $x = 3$, find: $x \cdot (2x - 1) - 1$	5 END

CRACKING THE CODE:

Ensure that your list of letters is written in the order that you solved the problems in. The code is the 2nd letter, then the 6th letter, then the 7th letter, then the 13th letter, then the 4th letter, and lastly the 3rd letter of this ordered list.

2	6	7	13	4	3



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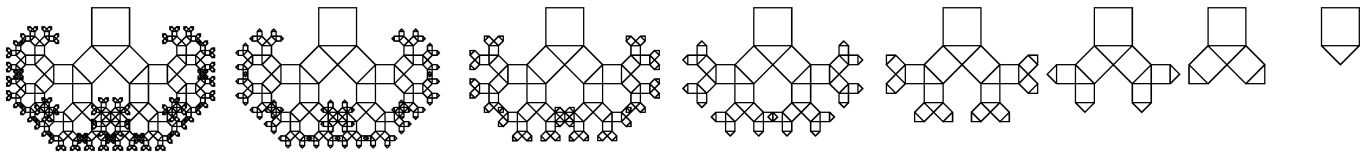
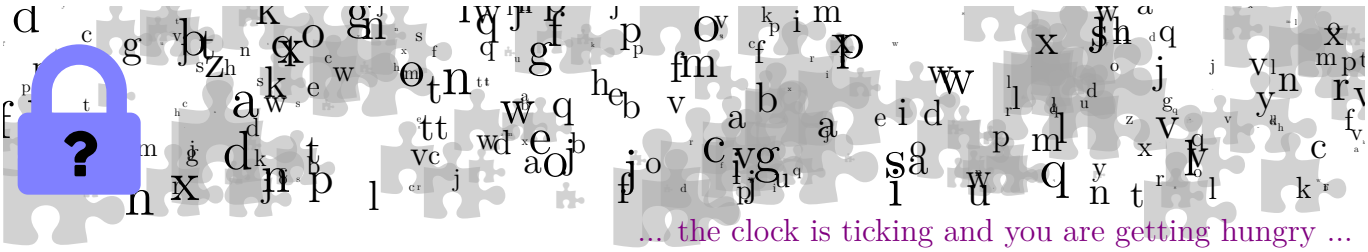


Escape Room - Equations

An evil scientist captured you... ... you need a password that unlocks the room ...



... the clock is ticking and you are getting hungry ...

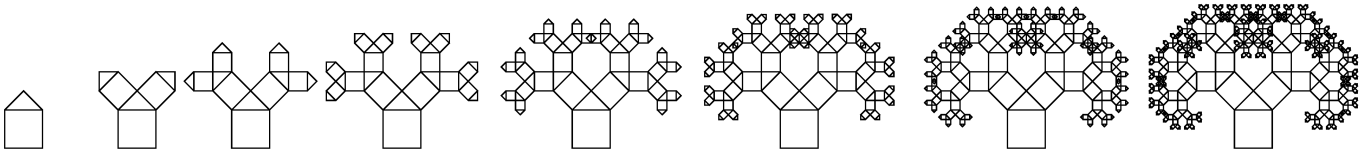
Solve the problem in the Start box. Look for your answer in the upper left corner of the remaining boxes to find out which problem to solve next. Repeat until you reach the end box.
Important: Keep track of the order of the letters in which you solve the problems.

START (H) Find x: $5x = 10$ 1st	−2 (Q) Find x: $\frac{x}{3} = 3$	3 (N) Find x: $2x - (x - 1) = 8$	−3 (P) Find x: $4x = 1$
$\frac{1}{2}$ (U) Find x: $x + 5 = 10$	6 (Y) Find x: $-6x = 36$	125 (U) Find x: $\frac{x}{3} = \frac{8}{3}$	1 (T) Find x: $2 - x = 5$
2 (A) Find $2x$: $5x = 10$	7 (Y) Find x: $2x = 1$	4 (P) Find x: $x + 8 = 11$	9 (H) Find x: $\frac{x}{5} = 25$
$\frac{1}{4}$ (J) Find x: $-x = 2$	5 (I) Find x: $x - 1 = 0$	8 (A) Find x: $6x = 36$	−6 END

CRACKING THE CODE:

Ensure that your list of letters is written in the order that you solved the problems in. The code is the 12th letter, then the 5th letter, then the 3rd letter, then the 14th letter, then the 8th letter, then the 7th letter, and lastly the 2nd letter of this ordered list.

12	5	3	14	8	7	2



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MATH PROGRAM – GRADE 5

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- 40+ on-line quizzes with 1000s of questions to help students master each topic
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- Handouts for students; detailed solutions for teachers/parents
- Go above and beyond: Challenge questions, extended lessons, advanced topics, EQAO preparation
- Prepare for high school math and science courses

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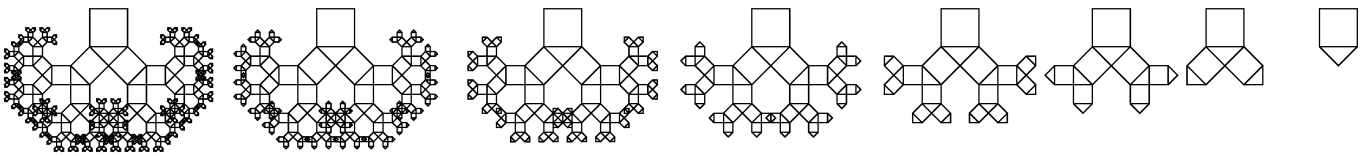
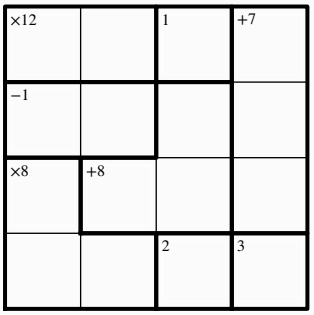


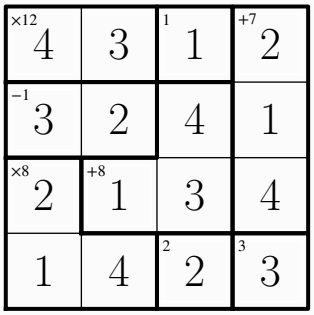
Activity: Mathdoku

Mathdoku is a logical puzzle based on KenKen™ invented by Japanese mathematics teacher Tetsuya Miyamoto in 2004.

The cells of the Mathdoku puzzle have to be filled with numbers from 1 to the size of the puzzle. In the top left corner of a framed area, there is a hint showing the specific operation applied on the numbers inside the framed area with the result. The numbers may occur only once in per row and per column. Also notice that the numbers inside a framed area may not necessarily be different when they are in different rows or columns.

Example 1:

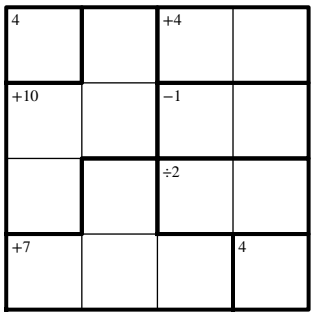


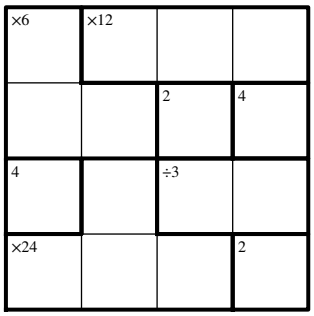


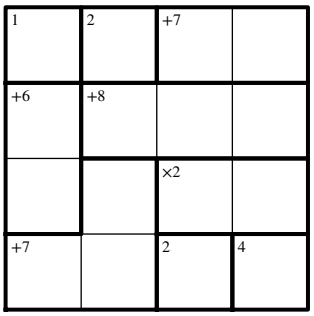
This is a 4 by 4 puzzle that must be filled with numbers 1 to 4. Each number can appear only once per row and per column.

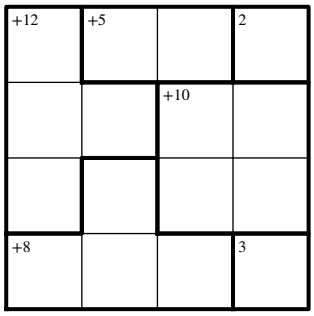
First fill in the framed areas that contain a single field (there are three such areas). Then consider framed areas with two fields. For example top left area is labeled with ×12. This tells us that the product of numbers inside the area is 12, which gives us the following possibilities: $3 \cdot 4$ and $4 \cdot 3$. Look at the solution and find the appropriate strategy.

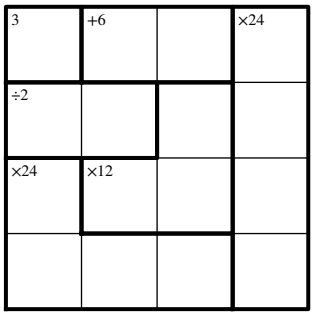
Problem 1: Solve the Mathoku puzzles.

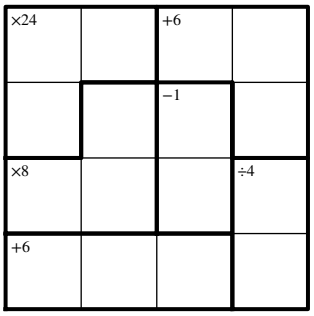


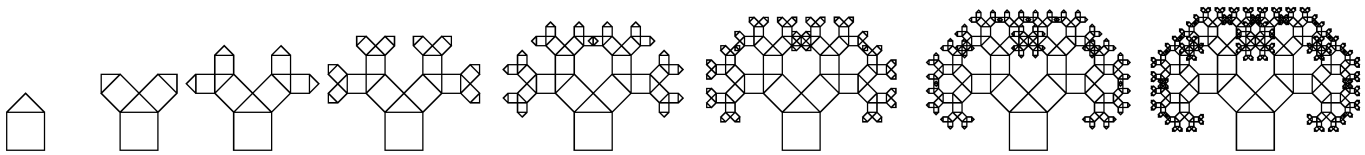












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MATH PROGRAM – GRADE 6

LEARN REAL MATH IN AN ORGANIZED WAY

- 50+ lessons split into 5 units based on the Ontario curriculum
- 600+ pages of ready-to-use worksheets with detailed examples, practice and homework questions
- Additional practice sheets to help students master important topics
- Fun activities that make math exciting and fun
- On-line lessons, videos, simulations – for independent learning
- Handouts for students; detailed solutions for teachers/parents
- Go above and beyond: challenge questions, extended lessons, advanced topics

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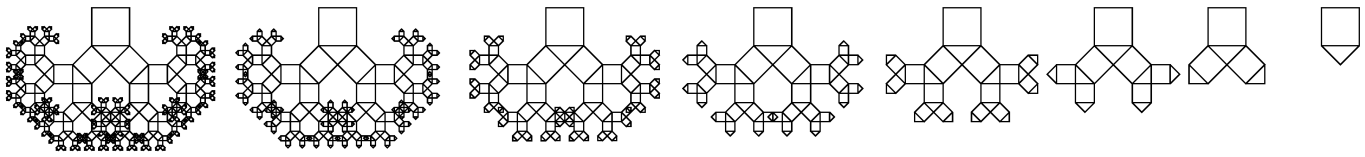
Is This for Me?

Our philosophy is to infuse classical education with digital technologies in a smart way. OntaOnta lessons are build to teach understanding and problem solving rather than memorization of specific facts and algorithms. Our program helps students build strong fundamentals required to think in a structured and mathematical way, and encourages logical and abstract thinking.

While some students might find this material intimidating at first, we sincerely believe that every student in grade 6 or higher will be able to complete the work in a classroom environment, or at home.

Our program is used by parents for homeschooling, as well as by teachers in their classrooms. The program not only covers the curriculum and prepares students for standardized tests, but it also provides the enrichment for students looking to participate in mathematics competitions.

Parents: you can expect to spend about 5 minutes per day monitoring your child's progress!



Activity: Five 2s

Example 1: Use five threes to make the number 20.

Solution:

$$33 \div 3 + 3 \cdot 3 = 11 + 9 = 20$$

Example 2: Use five threes to make the number 3.

Solution:

$$3 + 3 - 3 - 3 + 3 = 3$$

Problem: Use five twos to make expressions resulting in numbers from 0 to 26. The digit 2 must be written five times in each expression. You cannot use any other digits. You can use the following operators: $+$, $-$, $\cdot$, $\div$, exponents, and brackets.

Note: Some of the numbers have multiple solutions. All of the numbers except 13 and 26 can be made without using brackets. The number 17 requires use of exponents.

$0 =$

$1 =$

$2 =$

$3 =$

$4 =$

$5 =$

$6 =$

$7 =$

$8 =$

$9 =$

$10 =$

$11 =$

$12 =$

$13 =$

$14 =$

$15 =$

$16 =$

$17 =$

$18 =$

$19 =$

$20 =$

$21 =$

$22 =$

$23 =$

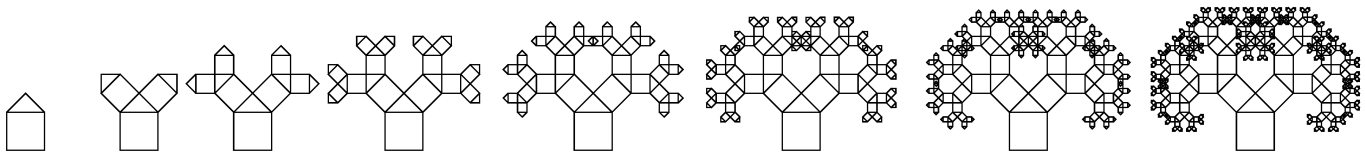
$24 =$

$25 =$

$26 =$

What other numbers could you make out of five twos?

What is the largest number you can make using five twos?



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ELITE MATH PROGRAM – GRADE 6

RECOMMENDED FOR GRADES 5-7

- 70+ lessons split into 5 units based on the Ontario curriculum
- 600+ pages of ready-to-use worksheets with detailed examples, practice and homework questions
- 90+ on-line quizzes with 1000s of questions to help students master each topic
- On-line lessons, videos, simulations – for independent learning
- Handouts for students; detailed solutions for teachers/parents
- Go above and beyond: Challenge questions, extended lessons, advanced topics
- Prepare for Standardized Tests, EQAO, and Math Contests

Is This for Me?

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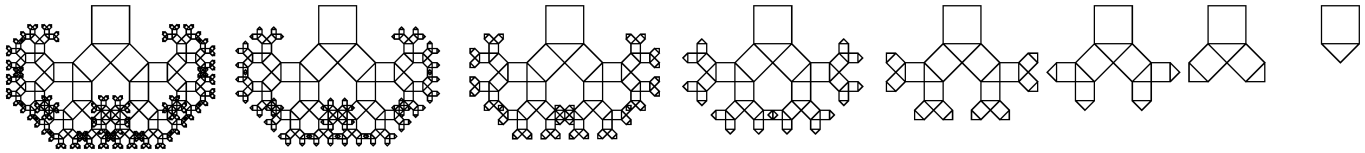
Parents: you can expect to spend about 5 minutes per day monitoring your child's progress!



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$16 =$

$17 =$

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$20 =$

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$22 =$

$23 =$

$24 =$

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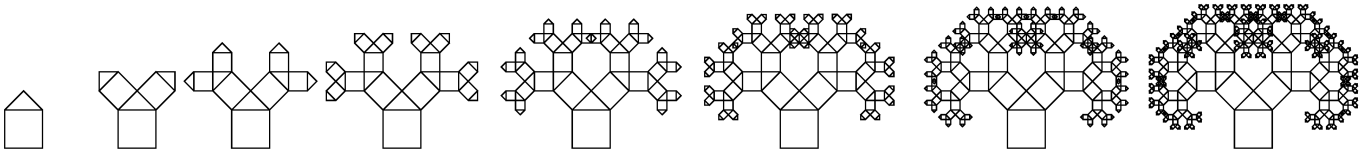

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MATH PROGRAM – GRADE 7

LEARN REAL MATH IN AN ORGANIZED WAY

- 50+ lessons split into 5 units based on the Ontario curriculum
- 800+ pages of ready-to-use worksheets with detailed examples, practice and homework questions
- 40+ on-line quizzes with 1000s of questions to help students master each topic
- On-line lessons, videos, simulations – for independent learning
- Handouts for students; detailed solutions for teachers/parents
- Go above and beyond: Challenge questions, extended lessons, advanced topics, EQAO preparation
- Prepare for high school math and science courses

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While some students might find this material intimidating at first, we sincerely believe that every student in grade 7 will be able to complete the work in a classroom environment, or at home.

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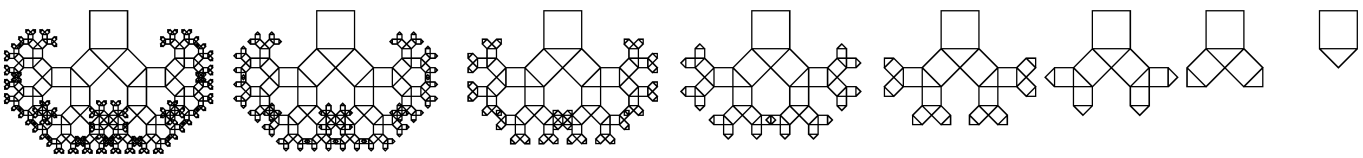
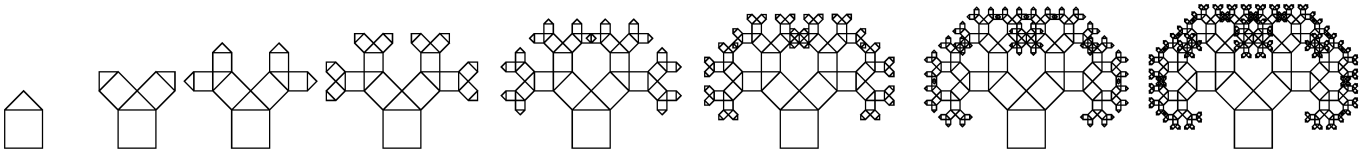


Activity: Would You Rather ... ?

Problem 1: Would you rather have a million dollars or a dollar an hour for every hour from the time you were born until today? 🖩

Problem 2: Would you rather live 10 trillion milliseconds or 1000 years? 🖩

Problem 3: Would you rather have 500 million ounces or one imperial ton of chocolate?



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MATH PROGRAM – GRADE 8

PREPARE FOR HIGH SCHOOL MATH

- 50+ lessons split into 5 units based on the Ontario curriculum
- 500+ pages of ready-to-use worksheets with detailed examples, practice and homework questions
- 100+ on-line quizzes with 1000s of questions to help students master each topic
- On-line lessons, videos, simulations – for independent learning
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- Go above and beyond: Challenge questions, extended lessons, advanced topics, EQAO preparation
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While some students might find this material intimidating at first, we sincerely believe that every student in grade 8 will be able to complete the work in a classroom environment, or at home.

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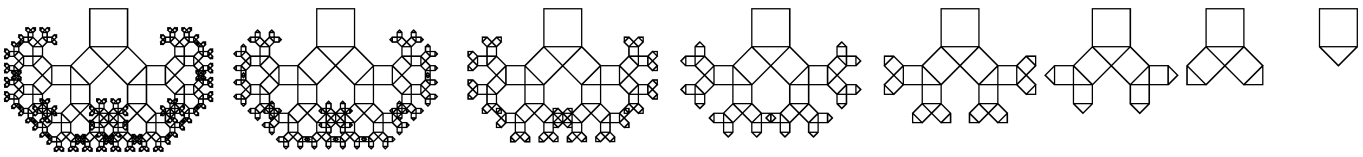
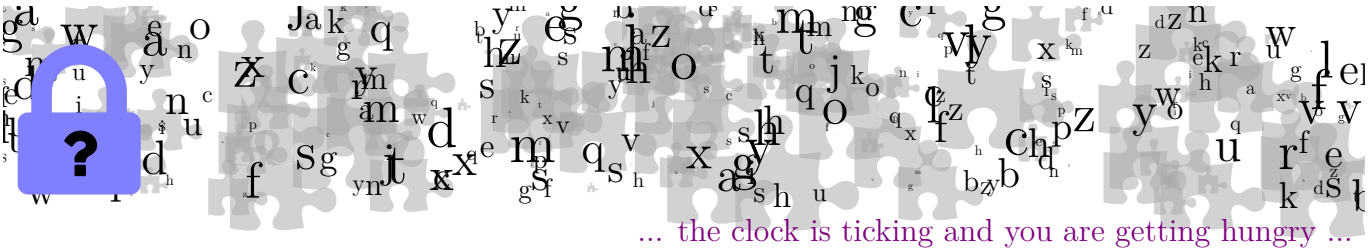


Escape Room - Equations

An evil scientist captured you... ... you need a password that unlocks the room ...



... the clock is ticking and you are getting hungry ...

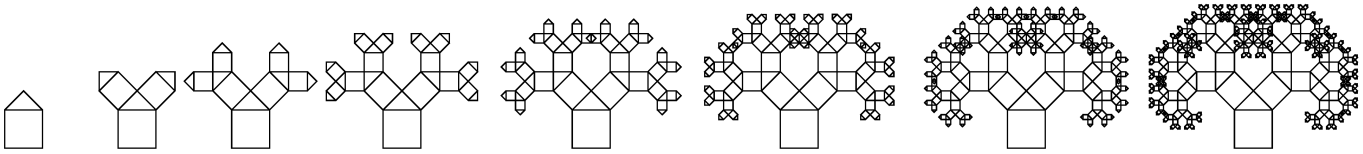
Solve the problem in the Start box. Look for your answer in the upper left corner of the remaining boxes to find out which problem to solve next. Repeat until you reach the end box.
Important: Keep track of the order of the letters in which you solve the problems.

START (Z) Find x: $5 + x = 15$ 1st	±5 (U) Find x: $2x = 22$	$\frac{2}{5}$ (D) Find x: $x - 20 = -15$	5 (C) Find a: $100 \cdot a = 25$
−12 (Q) Find x: $2x - 3 = -1$	20 (Q) Find x: $x + \frac{1}{4} = \frac{3}{4}$	12 (B) Find x: $\frac{3}{4}x = -9$	$\frac{5}{2}$ (K) Find x: $5x - 1 = 1$
11 (E) Find x: $2x = 5$	0 (L) Find x: $3 - 2(x + 3) + 4x = x$	$\frac{1}{2}$ (W) Find x: $\lvert 2x \rvert = 10$	1 (I) Find x: $3x - 1 = 1$
10 (Z) Find x: $x - 5 = 15$	$\frac{1}{4}$ (Z) Find x: $\frac{3}{4}x = 9$	$\frac{2}{3}$ (Y) Find x: $1 - 3x = 1$	3 END

CRACKING THE CODE:

Ensure that your list of letters is written in the order that you solved the problems in. The code is the 6th letter, then the 5th letter, then the 9th letter, then the 15th letter, then the 13th letter, and lastly the 8th letter of this ordered list.

6	5	9	15	13	8



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MATH PROGRAM – GRADE 9

THE BASICS DO MATTER

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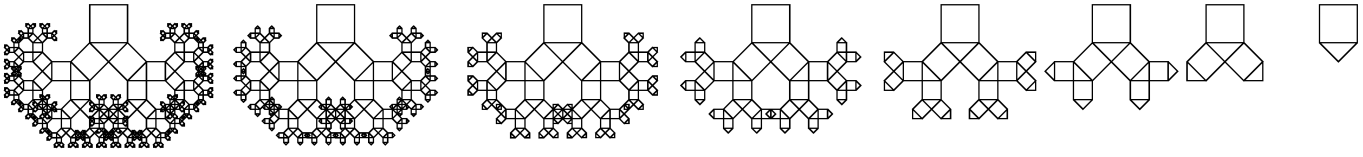
Parents: you can expect to spend about 5 minutes per day monitoring your child's progress!

Teachers: this is the only resource you will need to successfully teach this subject.



Activity: Investment

Problem 1: A merchant learned that 12 000 monkeys lived near a village. He went to the village and offered to pay \$10 per monkey. At first, the villagers thought that the merchant was joking, however some of them caught a few monkeys and got paid.

The news spread quickly and after just four days the merchant bought 25% of all the monkeys. Then he increased the award to \$20 per monkey. Over the following two days, villagers were able to catch and sell two-fifths of the remaining monkeys. The merchant increased the price to \$50 per monkey. The villagers captured and sold another 75% of the remaining monkeys.

It became harder to catch monkeys and the merchant increased the price to \$300 per monkey. After five days the villagers managed to capture 50% of the remaining monkeys. The merchant announced that he is taking a short trip home, and after his return he would be paying \$1000 per monkey. His employee stayed at the village in order to tend to the monkeys.

Over the next few days villagers were unable to find a single monkey. The employee wanted to help the villagers by selling the monkeys back to villager for \$800 each. The villagers calculated that for every monkey they buy they can make \$200 in profit. Over the next day, everyone was buying monkeys until the monkeys were sold out.

The villagers fed the monkeys and waited for the merchant to return. He never came. The employee also disappeared.

How much money did the villagers lose?

Challenge 1: If N is the initial number of monkeys, write an equation that calculates the remaining number of monkeys N_R.