

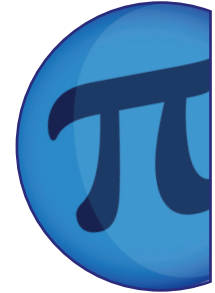


Algorithms: Turing

NAME:

CLASS:

DATE:



Basic

1) Jim, Robert and Tony are brothers aged 14, 10 and 9. Which brother is 10, which is 9 and which is 14?

Clue 1: Tony's age is not in the five times table.

Clue 2: Jim's age can be divided exactly by the number of days in a week.

Represent the above information in the logic table below. A cross means the statement is not true. A tick means the statement is true.

	9yrs	10yrs	14 yrs
Jim			
Robert			
Tony			

2) Jane collected information about cats and dogs that students owned in her class. She filled in the table below, but missed out one number.

	Has a dog	Does not have a dog
Has a cat	7	4
Does not have a cat	13	

a) Find the missing number if there are 30 students in Jane's class.

b) How many students own at least one of these pets?

c) How many students own a cat?

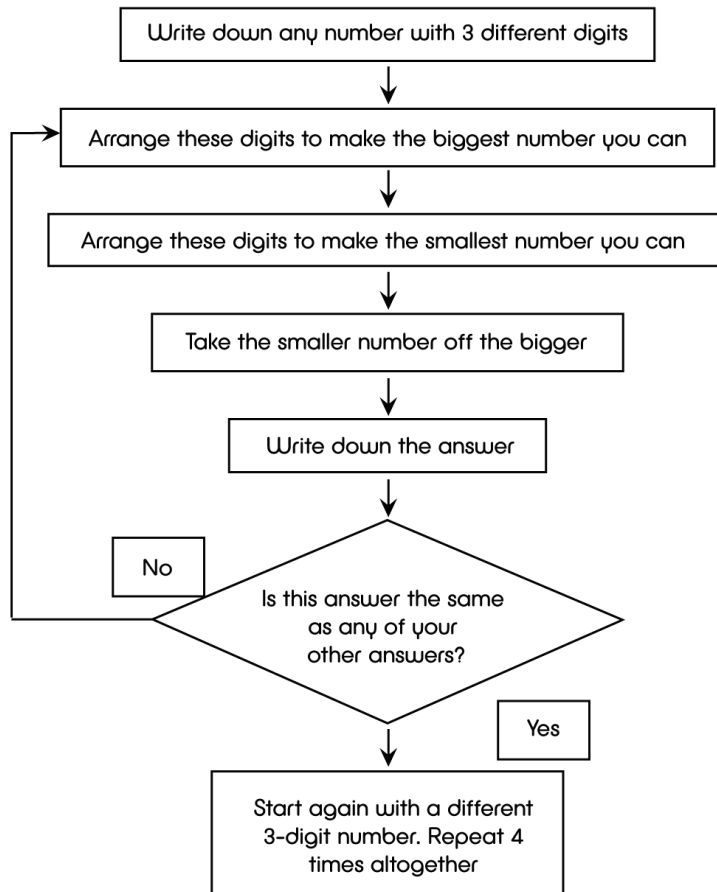
d) How many students do not own either a cat or a dog?



Algorithms: Turing

Basic

3) Follow the instructions in the diagram shown.



a) What do you notice about your answers?

b) Try starting with a 2-digit number.

c) Try this investigation with 4-digit numbers.

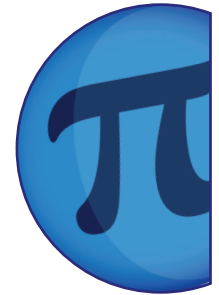


Algorithms: Turing

NAME:

CLASS:

DATE:



Core

1) Jane collected information about cats and dogs that students owned in her class. She filled in the table below, but missed out one number.

	Has a dog	Does not have a dog
Has a cat	7	4
Does not have a cat	13	

a) Find the missing number if there are 30 students in Jane's class.

b) How many students own at least one of these pets?

c) How many students own a cat?

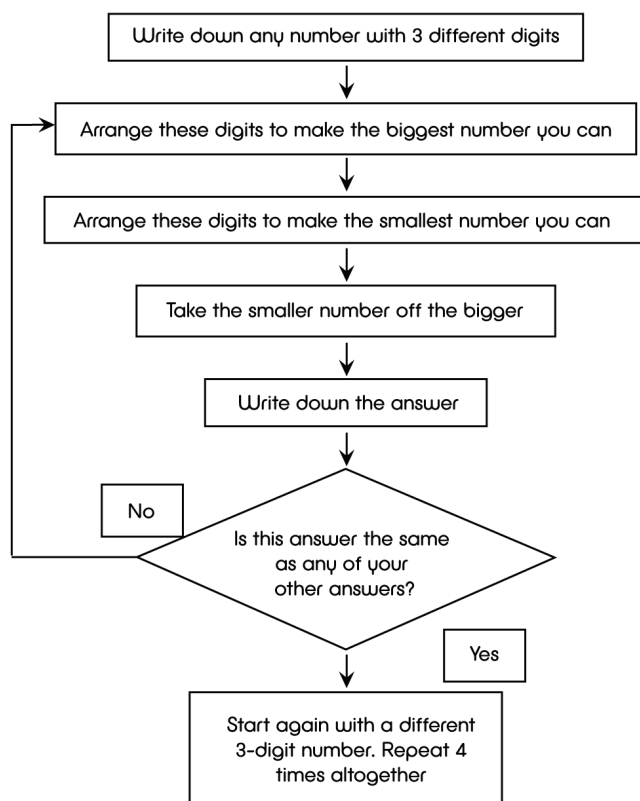
d) How many students do not own either a cat or a dog?



Algorithms: Turing

Core

2) Follow the instructions in the diagram shown.

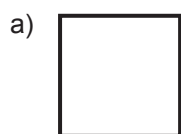


a) What do you notice about your answers?

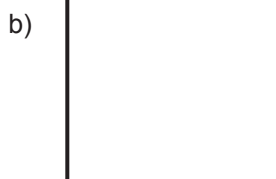
b) Try starting with a 2-digit number.

c) Try this investigation with 4-digit numbers.

3) By a process of trial and improvement, find the side length of each of the squares below. Give your answers correct to one decimal place.



Area = 13cm^2



Area = 30cm^2

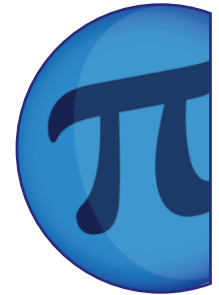


Algorithms: Turing

NAME:

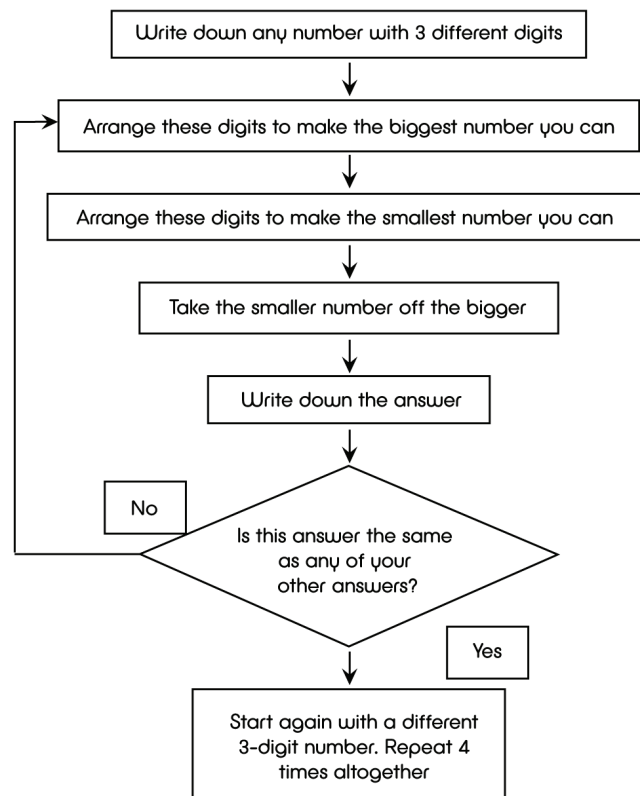
CLASS:

DATE:



Advanced

1) Follow the instructions in the diagram shown.



a) What do you notice about your answers?

b) Try starting with a 2-digit number.

c) Try this investigation with 4-digit numbers.

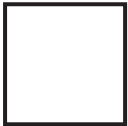


Algorithms: Turing

Advanced

2) By a process of trial and improvement, find the side length of each of the squares below. Give your answers correct to one decimal place.

a)



Area = 13cm^2

b)



Area = 30cm^2

3) By a process of iteration, solve the following equations ($x > 0$). Give your answers correct to one decimal place.

a) $x^2 = 20$

b) $x^3 = 30$

c) $10^x = 800$



Algorithms: Turing

ANSWERS

Basic

1)

	9yrs	10yrs	14 yrs
Jim	x	x	✓
Robert	x	✓	x
Tony	✓	x	x

Jim is 14; Robert is 10; Tony is 9.

2) a) 6

b) 24

c) 11

d) 6

Core

1) a) 6

b) 24

c) 11

d) 6

3) a) 3.6cm

b) 5.5cm

Advanced

2) a) 3.6cm

b) 5.5cm

3) a) 4.5

b) 3.1

c) 2.9