

Solve problems with two unknowns



- 1 Class 6 are trying to solve a number puzzle.

$$\triangle + \triangle + \bigcirc = 10$$

a)



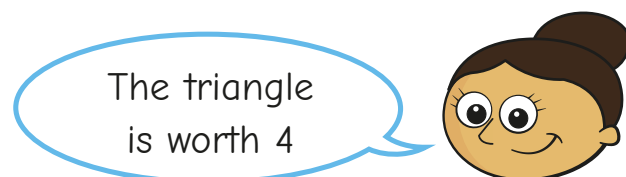
Dexter

The triangle could be 3 and the circle could be 4

Do you agree with Dexter? _____

Explain why.

b)



Dora

The triangle is worth 4

What is the value of the circle in Dora's number puzzle?

$$\bigcirc = \square$$

- c) Find other pairs of values that the triangle and circle could equal.

Find three pairs.

$$\triangle = \square \quad \bigcirc = \square$$

$$\triangle = \square \quad \bigcirc = \square$$

$$\triangle = \square \quad \bigcirc = \square$$

- 2 a and b are whole numbers.

$$2a + b = 14$$

Complete the table to show different possible values for a and b .

a	0	1	2	3	4	5	6	7
$2a$	0	2						
b	14							
$2a + b$	14	14	14	14				

- 3 c and d are both integers less than 15 but greater than zero.

$$3c - d = 2$$

- a) Complete the table to show different possible values for c and d .

c	1	2	3	4	5
$3c$	3				
d	1				
$3c - d$	2	2	2		

- b) Explain why there are no other possible values for c and d .

- 4 x and y are both multiples of 5 less than 100
If $2x = y$, circle the possible values of x and y .

$$x = 20, y = 20$$

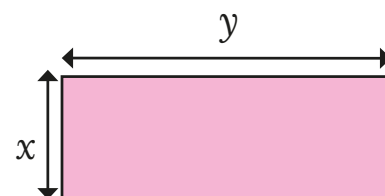
$$x = 10, y = 20$$

$$x = 20, y = 10$$

$$x = 35, y = 70$$

$$y = 90, x = 45$$

- 5 Here is a rectangle.
 x and y are both integers.
The rectangle has a perimeter of 28 cm.



- a) Write an equation to represent the perimeter of the rectangle.

- b) List all the possible pairs of values for x and y .

Compare answers with a partner. How do you know you have found all the possible values?



- 6 Aisha is buying some stationery for school.
She spends exactly £1
List all the possible combinations of pencils and pens that Aisha could have bought.



- 7 Ron has four digit cards.
- Two of the digits have the same value.
 - All of the digits are less than 10 but greater than zero.
 - All of the digits are odd.
 - The sum of the four digits is 24

Find two possible sets of digits.

Set 1

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Set 2

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8

$$2ab = 48$$

Find a pair of possible values for a and b .

$$a = \boxed{} \quad b = \boxed{}$$

Work with a partner to find as many pairs of values as you can.

