**1** **a)** Here is an equation.

$$\bigcirc + \square = 12$$

Find six possible pairs of values for the circle and square.

**b)** Here is another equation.

$$x + y = 12$$

Find six possible pairs of values for $x$ and $y$.

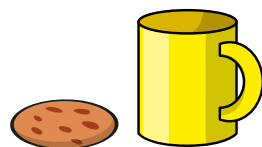**c)** What is the same and what is different about part a) and part b)?

**2** Kim buys these two items from a cafe.

The total cost is 90p.

**a)** What could the cost of each item be?

**b)** Compare answers with a partner.

**c)**

> A coffee could cost 90p.

Is this possible?

Explain your answer.

**3** $a$ and $b$ are whole numbers.

$$a + b = 8$$

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

| $a$ | 0 | 1 | 2 | | | | | |
|---|---|---|---|---|---|---|---|---|
| $b$ | | | | | | | | |
| $a + b$ | 8 | 8 | | | | | | |

What patterns do you notice?

**4** $c$ and $d$ are both numbers less than 20

$$c - d = 4$$

Complete the table to show possible values for $c$ and $d$.

| $c$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $d$ | | | | | | | | |
| $c - d$ | | | | | | | | |

**5** $a$ and $b$ are integers.

$$ab = 24$$

List all the possible values for $a$ and $b$.

**3** $a$ and $b$ are whole numbers.

$$a + b = 8$$

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

| $a$ | 0 | 1 | 2 | | | | | |
|---|---|---|---|---|---|---|---|---|
| $b$ | | | | | | | | |
| $a + b$ | 8 | 8 | | | | | | |

What patterns do you notice?

**4** $c$ and $d$ are both numbers less than 20

$$c - d = 4$$
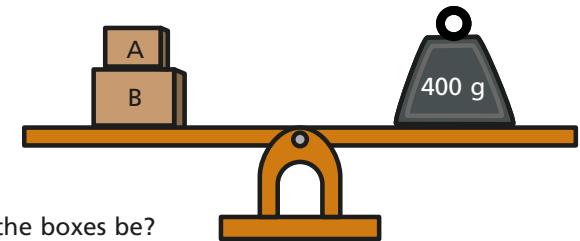
Complete the table to show possible values for $c$ and $d$.

| $c$ | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| $d$ | | | | | | | | |
| $c - d$ | | | | | | | | |

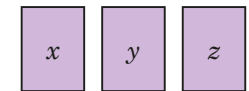**5** $a$ and $b$ are integers.

$$ab = 24$$

List all the possible values for $a$ and $b$.

**6** Some scales are balanced.



What could the masses of the boxes be?

**7** Rosie has three number cards.



- The sum of the cards is 12
- $x$ is greater than $y$ and $y$ is greater than $z$.
- All the numbers are greater than zero.

List all the possible values of $x$, $y$ and $z$.

**8** Eva is plotting co-ordinates $(x, y)$ on a grid.

She is only plotting co-ordinates where $x + y = 10$

Plot all the points Eva can plot on the grid.