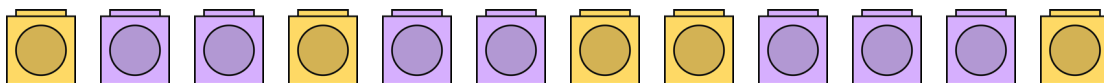


Fact families



Use equipment to help you create fact families.

a



$$\underline{5} + \underline{7} = \underline{\quad}$$

$$\underline{\quad} - \underline{5} = \underline{7}$$

$$\underline{7} + \underline{5} = \underline{\quad}$$

$$\underline{\quad} - \underline{7} = \underline{5}$$

b



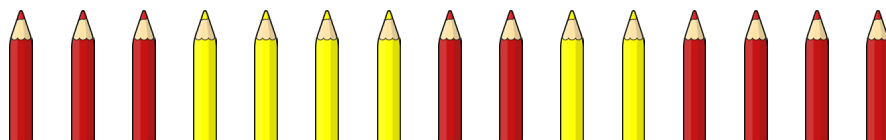
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

c



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

d



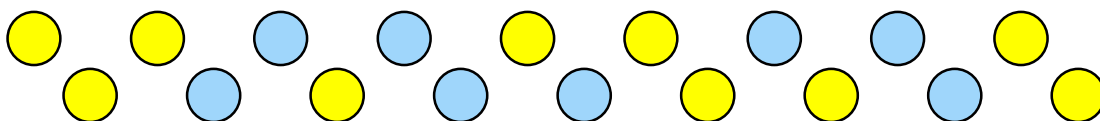
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

e



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

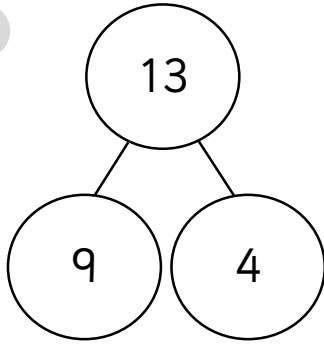
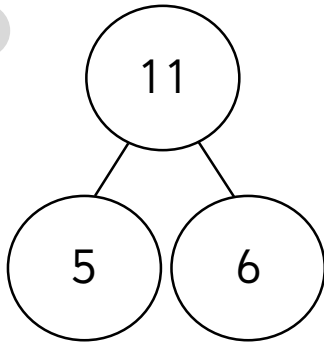
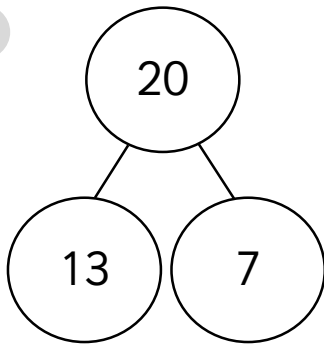
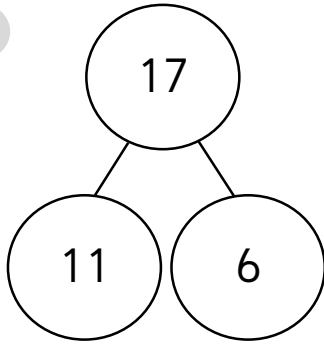
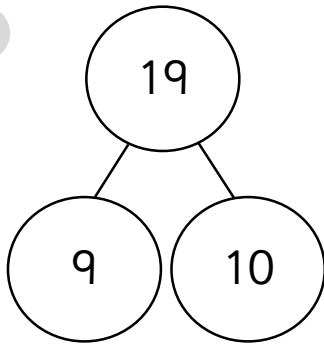
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

Fact families



Complete the part-whole models and write the associated fact families.

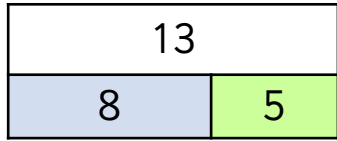
<p>a</p> 	$\underline{9} + \underline{4} = \underline{\quad}$ $\underline{4} + \underline{9} = \underline{\quad}$	$\underline{\quad} - \underline{9} = \underline{4}$ $\underline{\quad} - \underline{4} = \underline{9}$
<p>b</p> 	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
<p>c</p> 	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
<p>d</p> 	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
<p>e</p> 	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$

Fact families



Write all the associated number sentences in the fact families.

a



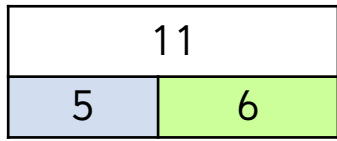
$$\underline{8} + \underline{5} = \underline{\quad}$$

$$\underline{\quad} - \underline{8} = \underline{5}$$

$$\underline{5} + \underline{8} = \underline{\quad}$$

$$\underline{\quad} - \underline{5} = \underline{8}$$

b



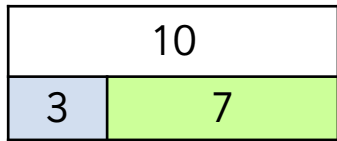
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

c



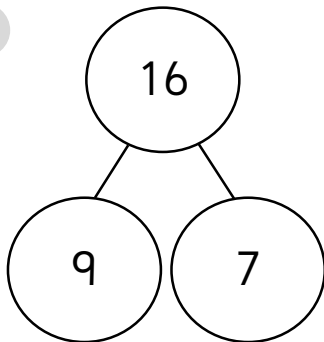
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

d



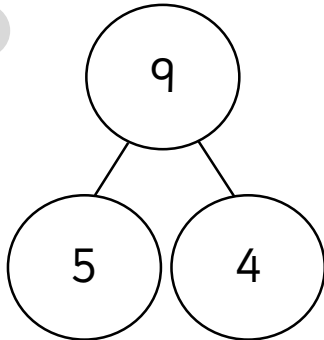
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

e



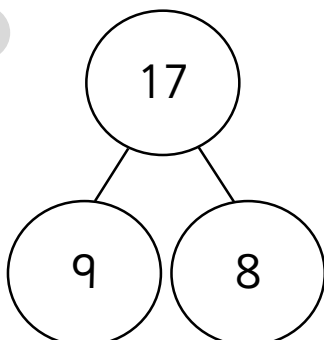
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

f



$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

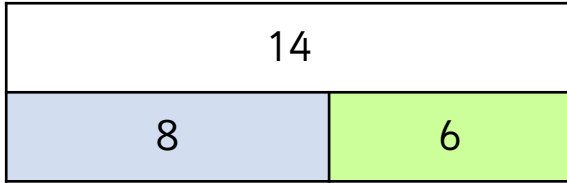
$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

Fact families



Complete the bar models and write the associated number sentences in the fact families.

a



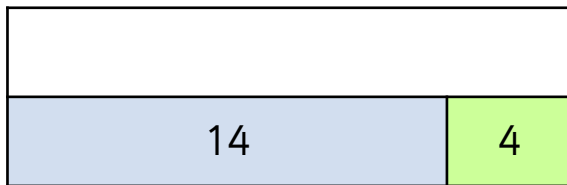
$$\underline{8} + \underline{6} = \underline{\quad}$$

$$\underline{6} + \underline{8} = \underline{\quad}$$

$$\underline{\quad} - \underline{8} = \underline{6}$$

$$\underline{\quad} - \underline{6} = \underline{8}$$

b



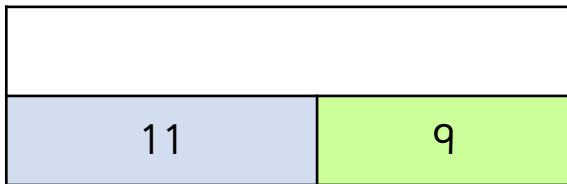
$$\underline{14} + \underline{4} = \underline{\quad}$$

$$\underline{4} + \underline{14} = \underline{\quad}$$

$$\underline{\quad} - \underline{14} = \underline{4}$$

$$\underline{\quad} - \underline{4} = \underline{14}$$

c



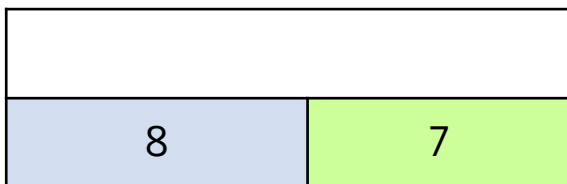
$$\underline{11} + \underline{9} = \underline{\quad}$$

$$\underline{9} + \underline{11} = \underline{\quad}$$

$$\underline{\quad} - \underline{11} = \underline{9}$$

$$\underline{\quad} - \underline{9} = \underline{11}$$

d



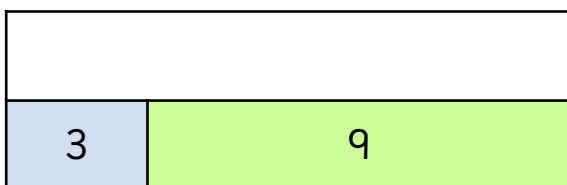
$$\underline{8} + \underline{7} = \underline{\quad}$$

$$\underline{7} + \underline{8} = \underline{\quad}$$

$$\underline{\quad} - \underline{8} = \underline{7}$$

$$\underline{\quad} - \underline{7} = \underline{8}$$

e



$$\underline{3} + \underline{9} = \underline{\quad}$$

$$\underline{9} + \underline{3} = \underline{\quad}$$

$$\underline{\quad} - \underline{3} = \underline{9}$$

$$\underline{\quad} - \underline{9} = \underline{3}$$

Fact families



Complete the part-whole models and write the associated fact families.

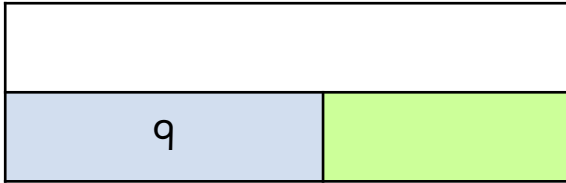
<p>a</p> <p>A part-whole model with a top circle and two bottom circles. The bottom-left circle contains the number 13, and the bottom-right circle contains the number 6.</p>	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
<p>b</p> <p>A part-whole model with a top circle containing the number 13 and two bottom circles. The bottom-right circle contains the number 4, and the bottom-left circle is empty.</p>	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
<p>c</p> <p>A part-whole model with a top circle and two bottom circles. The bottom-left circle contains the number 10, and the bottom-right circle contains the number 5.</p>	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
<p>d</p> <p>A part-whole model with a top circle containing the number 14 and two bottom circles. The bottom-left circle contains the number 6, and the bottom-right circle is empty.</p>	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$
<p>e</p> <p>A part-whole model with a top circle and two bottom circles. The bottom-left circle contains the number 4, and the bottom-right circle contains the number 7.</p>	$\underline{\quad} + \underline{\quad} = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$	$\underline{\quad} - \underline{\quad} = \underline{\quad}$ $\underline{\quad} - \underline{\quad} = \underline{\quad}$

Fact families



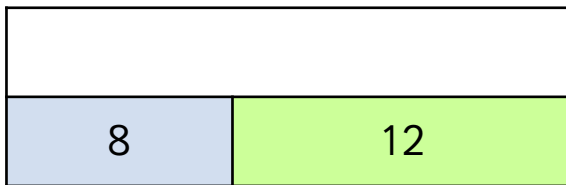
Complete the bar models and write the associated number sentences in the fact families.

a



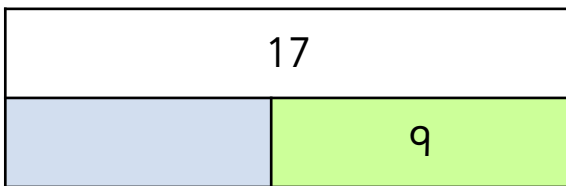
$$\begin{array}{l} \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$

b



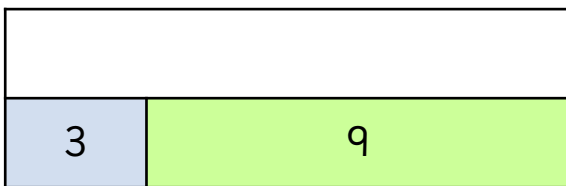
$$\begin{array}{l} \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$

c



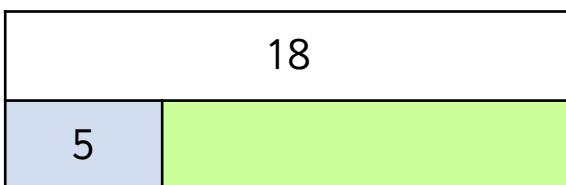
$$\begin{array}{l} \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$

d



$$\begin{array}{l} \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$

e



$$\begin{array}{l} \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} + \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \\ \underline{\quad} - \underline{\quad} = \underline{\quad} \end{array}$$

Fact families



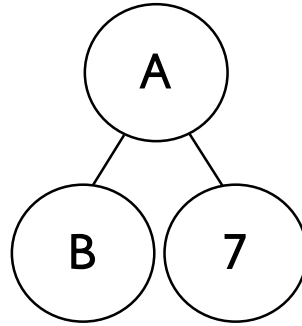
Problem solving and reasoning cards:

The fact family below is correct because all the numbers are related.

$3 + 5 = 8$
$5 + 3 = 8$
$3 - 8 = 5$
$5 - 8 = 3$

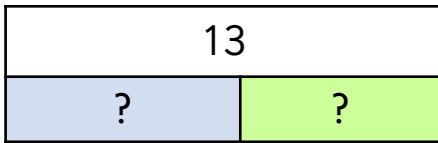
True or false?

Here is an incomplete part-whole model. The total is greater than 10 but less than 16. What could the numbers A and B be?



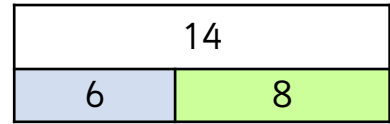
List all possibilities.

Create your own fact family. How many different ways can it be completed?



_____ + _____ = _____
 _____ + _____ = _____
 _____ = _____ - _____
 _____ = _____ - _____

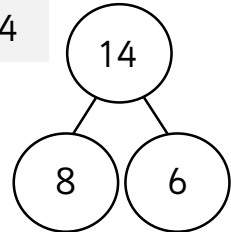
Circle the representations that represent the bar model below.



$14 = 6 + 8$

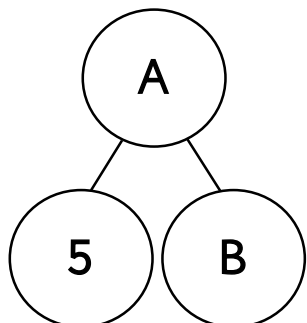
$8 - 6 = 14$

There are 8 sweets in a jar, 6 get eaten.



Here is an incomplete part-whole model. The total is greater than 9 but less than 14. What could the numbers A and B be?

List all possibilities.



Asha

All the facts are correct because the numbers are related.



Rob

Not all facts are correct.

$5 + 4 = 9$

$4 + 5 = 9$

$9 = 5 - 4$

$4 = 9 - 5$

Who do you agree with?
Explain your answer.