1. Numbers to 10 000



Name _____ Class _____ Date _____

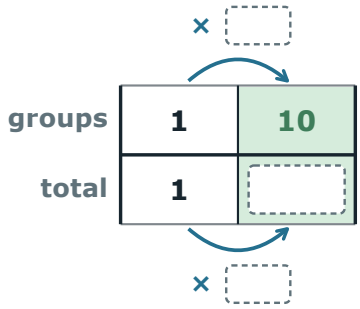
Max and Teddy's stop · London · Tower Bridge. On the riverside path in London, Tower Bridge lifts both its roads for a tall ship with three masts.

Today: Every digit has a **place**, and its place says what the digit is **worth**, up to 10 000.

Warm-up Ten times as many

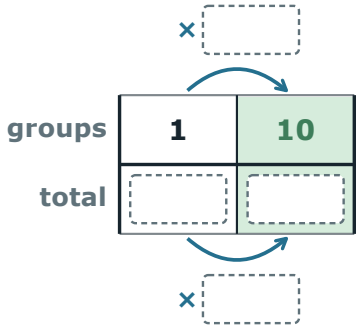
Each answer helps with the next one. Fill in the model, then write the equation.

1 **a)** 10 × 1



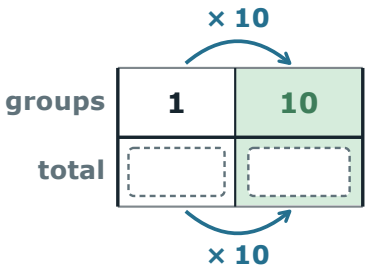
10 × 1 = _____

b) 10 × 10



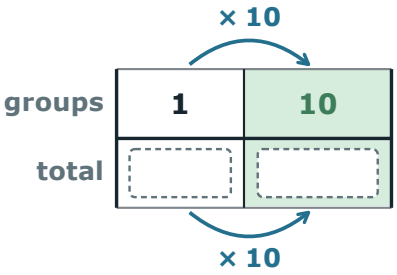
10 × 10 = _____

c) 10 × _____



10 × _____ = _____

d) 10 × _____



10 × _____ = _____

e) 9 999 + 1

TTh	Th	H	T	O
	9	9	9	9

9 999 + 1 = _____

KNOWLEDGE **On the place-value chart**

WORKED EXAMPLE **What number is represented?**

Th	H	T	O
○○ ○		○○ ○○	○○ ○○ ○
3	0	4	5

the number is 3 045

1. There are no counters in the hundreds. A **0** holds that place.
2. 3 thousands, 0 hundreds, 4 tens and 5 ones: **3 045**.

3 000 + 40 + 5 = 3 045

2 ★ **What number is represented?**

Th	H	T	O
○○	○○ ○○	○○ ○○ ○	○
2			1

the counters show _____

3 ★ The chart shows **4 615**. Oliver adds 1 counter to the hundreds column. **What is the number now?**

Th	H	T	O
○○ ○○	○○ ○○ ○○	○	○○ ○○ ○
4		1	5

4 615 + 100 = _____

4 ★ Fill in the model, then write the equation.

a) What is the value of the **7** in **5 274**?

Th	H	T	O
5	2	7	4

the 7 is worth ☐

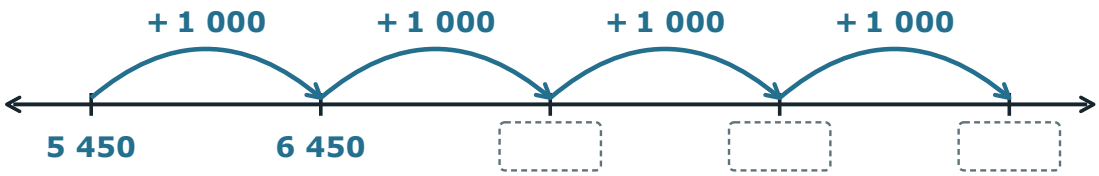
5 274 = 5 000 + 200 + _____ + 4

b) How many tens are there in **420**?

Th	H	T	O
	○○ ○○	○○ ○○	
	4	2	0

420 = _____ tens + 2 tens = _____ tens

c) Count on in 1 000s from **5 450**.



5 450 + 1 000 + 1 000 + 1 000 + 1 000 = _____

5 ★ Draw counters on the chart to show **2 406**. **How many counters go in each column?**

2 406 = _____ Th + _____ H + _____ O

Th	H	T	O

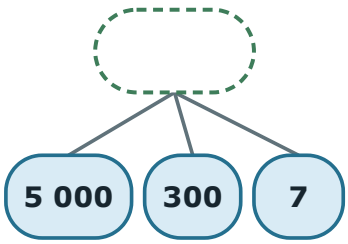
6 ★ Fill in or finish the model, then write the equation.

a) Write **four thousand and six** in numerals.

Th	H	T	O

four thousand and six = _____

b) Complete the part-whole model for **5 000 + 300 + 7**.



5 000 + 300 + 7 = _____

c) What is **1 more**, **10 more**, **100 more** and **1 000 more** than **2 899**?

Th	H	T	O
2	8	9	9

2 899 + 1 = _____

2 899 + 10 = _____

2 899 + 100 = _____

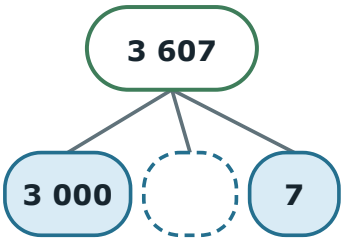
2 899 + 1 000 = _____

d) Count back in 100s from **3 240**.



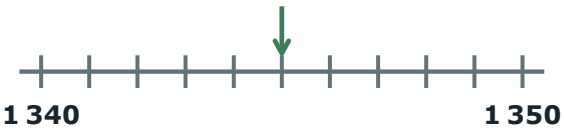
3 240 − 100 − 100 − 100 = _____

e) Complete the number sentence.



3 607 = 3 000 + _____ + 7

f) What number is **halfway** between **1 340** and **1 350**?



halfway between 1 340 and 1 350 is _____

g) What is **1 less**, **10 less**, **100 less** and **1 000 less** than **6 205**?

Th	H	T	O
6	2	0	5

6 205 − 1 = _____

6 205 − 10 = _____

6 205 − 100 = _____

6 205 − 1 000 = _____

7 ★ The parts are not in order: **20 + 7 000 + 5 + 300**. **Write the number.**

20 + 7 000 + 5 + 300 = _____

Th	H	T	O

8 ★ Partition **8 052** in a part-whole model: one part for every digit that is not 0. Start with the biggest part.

Draw your model

8 052 = _____ + _____ + _____

9 ★ The parts are not in order: **9 + 4 000 + 60**. **Write the number.**

9 + 4 000 + 60 = _____

Th	H	T	O

APPLICATION **At Tower Bridge** Draw your own model, then write your number sentence.

10 ★★ Oliver, a guide at Tower Bridge, gives Max clues to the year the bridge first opened. The thousands digit is **1**. The hundreds digit is **8 times** the thousands digit. The ones digit is **half** of the hundreds digit. The four digits add up to **22**. **In which year did Tower Bridge open?**

Tower Bridge opened in _____

Th	H	T	O

11 ★★ Max's watch has counted **4 950 steps** since the plane landed. He walks **100 more steps** to the railings while Teddy runs ahead, then **1 000 more steps** along the river. **How many steps does the watch show now?**

Draw your model

_____ = _____

12 ★★ On page 1 of the journal Max shows the travel fund on a place-value chart: **R6 305**. He spends **R1 000** on train tickets and **R100** on lunch. **How much is left?**

Th	H	T	O
●●●●●●	●●●		●●●●●
6	3	0	5

_____ = R_____

13 ★★ Oliver makes a 4-digit number on a place-value chart with exactly **6 counters**. Each column has a different number of counters. The hundreds column is **empty**. There are **2 more** counters in the ones than in the thousands. **What is Oliver's number?**

Oliver's number is _____

Th	H	T	O

REASONING **Is every digit in its place?** Decide, then explain how you know.

14 ★★★

a) Oliver writes **7 742** in Max's journal. He says: "The first 7 is worth ten times as much as the second 7." **True or false?**

◯ True ◯ False

b) So write what each 7 in **7 742** is worth.

Th	H	T	O
7	7	4	2

7 742 = _____ + _____ + 40 + 2

Explain: _____

15 ★★★

a) Max writes **5 438 = 5 000 + 400 + 30 + 8**. Oliver writes **5 438 = 4 000 + 1 400 + 30 + 8**. **Who is right?**

◯ Only Max
◯ Only Oliver
◯ Both of them

b) So complete a third way.

Draw your model

5 438 = 5 000 + 300 + _____ + 8

Explain: _____

16 ★★★

a) Max counts back in 100s: **2 362, 2 262, 2 162, 2 062, 2 962**. Oliver says the last number is wrong. **Who is right?**

◯ Max: the hundreds digit goes 3, 2, 1, 0 and then 9
◯ Both: the last number could be either
◯ Oliver: 100 less than 2 062 is less than 2 000

b) So count back 100 from **2 062** on a number line.



_____ = _____

Explain: _____

17 ★★★

a) A 4-digit number is greater than a 3-digit number. **Always, sometimes or never?**

◯ always ◯ sometimes
◯ never

b) The greatest 3-digit number is **999**. **What is 1 more?**

Th	H	T	O
	9	9	9

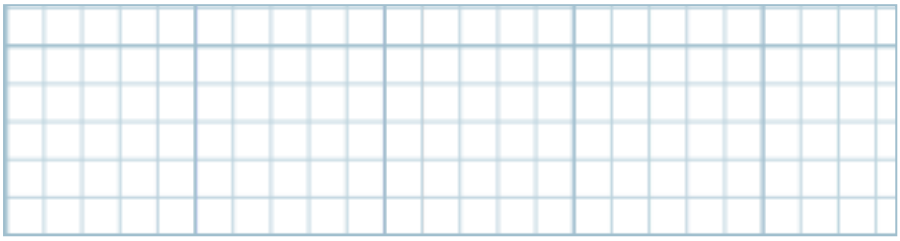
_____ = _____

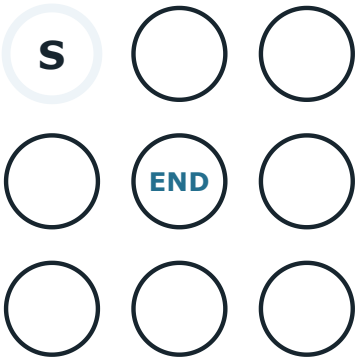
Explain: _____

18 PROBLEM OF THE DAY **The lantern trail**

On the riverside path by Tower Bridge, Oliver sets out nine lanterns in a 3 by 3 square on the cobbles for an evening walk, and Teddy sniffs at every one. Max wants to light every lantern in one walk, and the middle one last. He steps only to a lantern right next to him (never diagonally) and never visits a lantern twice.

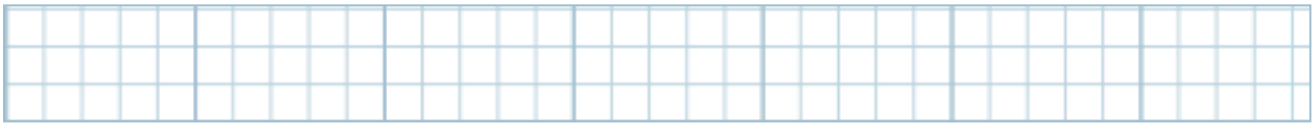
Start at S and finish on the lantern marked END. Number the lanterns in the order Max lights them.





Think further: Now there is no END. From which lanterns can Max not start a walk that lights all nine? Why?

Explain one thing you learned.



I can do this: ◯ independently ◯ with help ◯ I need more practice