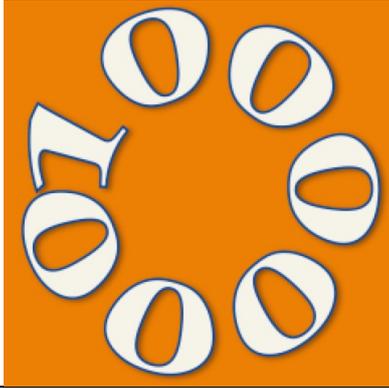


### NEARLY A MILLION

**Easy starter:** Write down 2 numbers that add up to a million, one smaller than 450 000 and one bigger than 450 000.

If you shared one million dollars between 7 people how many dollars would they get?



Which of the following is divisible by 7?  
Which is divisible by 6?

- (a) one million minus one
- (b) one million minus two
- (c) one million minus three
- (d) one million minus four
- (e) one million minus five.

What are the prime factors of one million?

### SOLUTION

One million divided by 7 is 142 857 remainder 1 so each would get \$142 857

From this it follows that one less is divisible by 7.

(a) one million minus one    999 999 is divisible by 7  
 $7 \times 142\,857 = 999\,999$

$$3 \times 3 \times 3 \times 7 \times 11 \times 13 \times 37 = 999\,999$$

(d) one million minus four    999 996 is divisible by 6  
To be divisible by 6 the number must be even and divisible by 3

The prime factors of 1 000 000 are 2 and 5.

### NOTES FOR TEACHERS

#### Diagnostic Assessment

Put up 1 finger if you think the answer is A. 2 fingers for B, 3 fingers for C and 4 fingers for D.

	3	1	□	4
+	2	□	7	□
<hr/>				
	5	9	6	2

Which digit can go in all boxes  
to make the calculation  
correct?

**C** is the correct answer because 4 add 8 is 12 so you carry the one then 8 add 1 add 7 is 16 so you carry the one and 8 add 1 is 9.

<https://diagnosticquestions.com>



2



9



8



None of  
them

## Why do this activity?

This activity gives some practice in working with large numbers and practice in division and it re-visits the concept of prime numbers.

## Intended Learning Outcomes

Learners will develop numeracy skills, in particular in working with large numbers and in division.

## Possible approach

Start your lesson with the diagnostic assessment. Steps for diagnostic assessment:

1. Write the question on the board and ask the class to put up 1 finger if they think the answer is A, 2 fingers for B, 3 fingers for C and 4 fingers for D.
2. Ask a learner who gave answer A to explain why he or she gave that answer and DO NOT say whether it is right or wrong but simply thank them for giving the answer.
3. Then do the same for answers B, C and D. Try to make sure that learners listen to these reasons and try to decide if their own answer was right or wrong.
4. Ask the class again to vote for the right answer by putting up 1, 2, 3 or 4 fingers. Notice if there is a change and who gave right and wrong answers.
5. Give an explanation of why answer C is correct emphasising the place values and the reasons for 16 in the tens column being 1 hundred + 6 tens so you add 1 + 1 + 8 in the hundreds column giving the answer 6062 NOT 5962.

This activity could be a lesson starter. Write the problem on the board, preferably before the learners arrive in the classroom. Then ask them to work individually to find the answer.

This activity can then be used to lead to further work on factorisation into prime factors.

## Key questions

Is that number divisible by 3? Why?

Is that number divisible by 2? Why?

## Possible extension

You might ask the learners to find the prime factors of 999999

## Possible support

It may help to take chunks that divide by 7.

Try  $1\ 000\ 000 = 700\ 000 + 280\ 000 + 14\ 000 + 5600 + 350 + 50$