d. 43 000 510 _____

e. 305 053 _____

3. Write the following numbers in compact form. Use zero as a place holder where necessary.

a. $4 \times 1\,000\,000 + 6 \times 100\,000 + 8 \times 10\,000 + 3 \times 1\,000 + 2 \times 100 + 9 \times 10 + 5 \times 1$

_____

b. $6 \times 100\,000 + 0 \times 10\,000 + 8 \times 1\,000 + 3 \times 100 + 0 \times 10 + 5 \times 1$

_____

c. $7 \times 10\,000 + 5 \times 1\,000 + 0 \times 100 + 2 \times 10 + 8 \times 1$

_____

d. $9 \times 10\,000\,000 + 3 \times 10\,000 + 4 \times 1\,000 + 6 \times 10 + 8 \times 1$

_____

e. $1 \times 100\,000 + 8 \times 10\,000 + 5 \times 100 + 3 \times 10$

_____

4. Write the following numbers in expanded form, as in question **3**.

a. 567 890 _____

_____

b. 9 182 736 _____

_____

c. 6 786 _____

_____

d. 508 760 _____

_____

e. 13 700 050 _____

_____

5. Write the following numbers in compact form.

a. $600\,000 + 5\,000 + 400 + 30 + 6$ _____

b. $12\,000\,000 + 12\,000 + 100 + 20$ _____

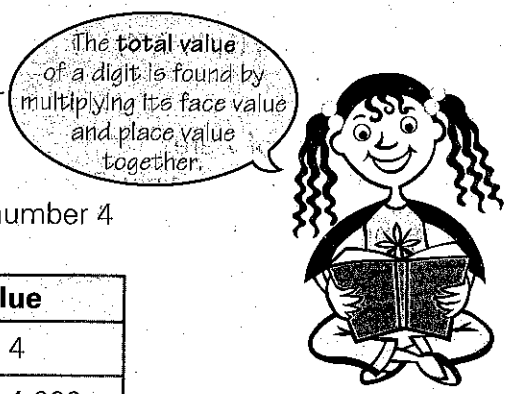
c. $7\,000 + 700 + 70 + 7$ _____

d. $1\,000\,000 + 10\,000 + 1\,000 + 100 + 1$ _____

Number/Algebra: Face, place, and total value

For any digit in a whole number:

- the **face value** of the digit is the numerical value of the digit
- the **place value** is the value of the place the digit occupies in the number



Example: Find the face, place and total value of the number 4 in each of the following numbers.

Number	Face value	Place value	Total value
64	4	1	$4 \times 1 = 4$
4 631	4	1 000	$4 \times 1\,000 = 4\,000$
438 967	4	100 000	$4 \times 100\,000 = 400\,000$

Practising face, place and total value

1. Find the *face value* of the underlined digit in the following numbers.

a. 4̲23 **b.** 7̲ 439 **c.** 9 5̲68 763 **d.** 34̲5 **e.** 5 2̲34

2. Find the *place value* of the underlined digit in the following numbers.

a. 3̲58 **b.** 4̲3 567 **c.** 9̲03 763

d. 7̲1 **e.** 5 7̲55 **f.** 412 8̲54

3. Find the *total value* of the underlined digit in the following numbers.

a. 39 5̲08 **b.** 4̲13 523 **c.** 3 7̲63

d. 72̲7 901 **e.** 99 9̲55 **f.** 11̲4 613

4. A 5-digit whole number is made using the digits 0, 3, 5, 6 and 8. Write down:

a. The largest whole number that can be made.

b. The smallest whole number that can be made.

c. The smallest number greater than 35 000 that can be made.

d. The largest number less than 50 000 that can be made.

5. A 3-digit whole number is made using the digits 2, 7 and 8. The digit with the largest face value is in the place with the smallest place value. The digit with the smallest face value is in the place with the largest place value. Find the total value of the 7.

_____

6. A 2-digit number is made using two different digits. The difference between the total values of each digit is 1. What is the number? _____

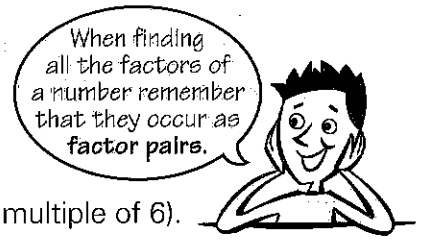
7. Each of the digits in the number 39 184 has its face value decreased by 1. By how much does the value of the number reduce?

Number/Algebra: Multiples and factors

Multiples of a given number are formed by multiplying that number by the **counting numbers** {1, 2, 3, 4, ...}.

Example:

1. The multiples of 7 are:
   7, 14, 21, 28, ... since $7 \times 1 = 7$, $7 \times 2 = 14$, $7 \times 3 = 21$, $7 \times 4 = 28$, etc.
2. The multiples of 6 that fall between 11 and 32 are:
   12, 18, 24 and 30 these are 6×2, 6×3, 6×4, 6×5

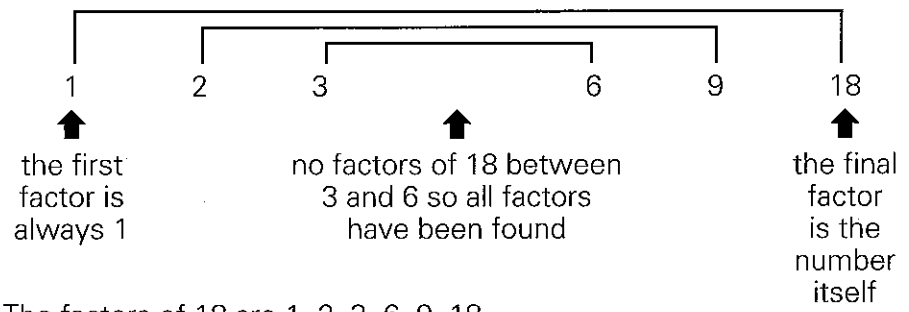


Factors of a given number are numbers which divide into the given number exactly.

For example, 6 is a factor of 30 since $30 \div 6 = 5$ (i.e. 30 is a multiple of 6).

Example:

To list the factor pairs of 18, form products that equal 18.



Factor pairs of 18
1×18
2×9
3×6

The factors of 18 are 1, 2, 3, 6, 9, 18.

Practising multiples and factors

1. List the following:
   a. multiples of 5 between 26 and 51 _____
   b. multiples of 7 between 40 and 90 _____
   c. multiples of 8 between 50 and 100 _____
   d. multiples of 11 less than 125 _____
   e. multiples of 10 less than 101 _____
2. Circle the numbers which make the statement true.
   a. 5 is a factor of: 1 295 54 300 25
   b. 3 is a factor of: 1 111 369 45 29
   c. 10 is a factor of: 320 1 001 500 5