

Write 10, 100, 1,000 etc. as powers of ten 

**I** Complete the statements.

a)  $2^3 =$    $\times$    $\times$

b)  $5^6 =$    $\times$    $\times$    $\times$    $\times$    $\times$

c)  $3^5 =$  \_\_\_\_\_

d)  $6 \times 6 = 6$

e)  $9 \times 9 \times 9 \times 9 \times 9 \times 9 \times 9 =$

2 Write these numbers in the form  $10^n$

**a)**  $100 = 10 \times 10 = 10^{\square}$

b)  $1,000 = \underline{\hspace{2cm}} = 10^{\boxed{\hspace{1cm}}}$

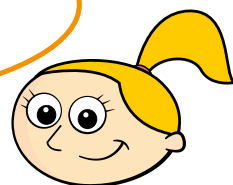
c)  $100,000 = \underline{\hspace{2cm}} = \boxed{\hspace{1cm}} \boxed{\hspace{1cm}}$

d)  $10 = \square \square$

e)  $100,000,000 =$

3 Eva writes  $10^5$  as 1000000

$10^5$  has a power of 5, so you need to write 10 and 5 extra zeros.



Is Eva correct? \_\_\_\_\_

Explain your answer.

**4** Write these powers of 10 as ordinary numbers.

a)  $10^2 =$

c)  $10^9 =$

**b)  $10^4 =$**

d)  $10^{12} =$

Explain how you worked out the answers.

Did you use the same method for each question?

**5** Match the powers of 10 to the numbers.

$10^8$

$10^1$

$10^6$

$10^4$

$10^0$

10

10,000

1

100,000,000

1,000,000

**6** What is the value of the 1 in each number?

a)  $10^7$  \_\_\_\_\_

**b)  $10^3$**  \_\_\_\_\_

c)  $10^9$  \_\_\_\_\_

- 7 Write these numbers in ascending order.

One billion

$10^4$

One hundred thousand

$10^3$

$1,000^2$

Ten million

One hundred

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Talk about your method with a partner.



- 8 Here is the definition of a quadrillion.

**quadrillion:** number formed by writing 1 followed by fifteen zeros

Write a quadrillion as a power of 10

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- 9 A trillion can be written as  $10^{12}$

Write a trillion as an ordinary number. \_\_\_\_\_

- 10 Use the table to help you answer the questions.

|             |           |
|-------------|-----------|
| quintillion | $10^{18}$ |
| sextillion  | $10^{21}$ |
| septillion  | $10^{24}$ |
| octillion   | $10^{27}$ |

a) How many times greater than a million is a quintillion? \_\_\_\_\_

b) How many times greater is an octillion than a septillion? \_\_\_\_\_

- 11 a) Write  $10^3 \times 10^2$  as a single power of 10 \_\_\_\_\_

b) Explain your method.

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c) Tick the statements that are correct.

$10^3 \times 10^2 = 10^6$  ☐

$10^5 \times 10^3 = 10^8$  ☐

$10^7 \times 10 = 10^7$  ☐

$10 \times 10^4 = 10^5$  ☐

$10^5 \times 10^5 = 10^{25}$  ☐

$10^4 \times 10^2 \times 10^3 = 10^9$  ☐

d) The answer is  $10^8$

What is the question?

