

Investigate negative powers of ten

H



1 Complete the table.

Power of 10	Calculation	Answer
10^6	$10 \times 10 \times 10 \times 10 \times 10 \times 10$	1,000,000
10^5	$10 \times 10 \times 10 \times 10 \times 10$	
10^4		
10^3		
10^2		
10^1		
10^{-1}	$1 \div 10$	0.1
10^{-2}	$1 \div 10 \div 10$	
10^{-3}		
10^{-4}		
10^{-5}		

What patterns can you see?

2 Write these numbers in the form 10^n

- a) $0.0001 =$ _____
- b) $0.1 =$ _____
- c) $0.000\ 01 =$ _____
- d) $0.000\ 001 =$ _____
- e) $0.000\ 000\ 000\ 01 =$ _____
- f) one ten thousandth = _____

3 Write these powers of 10 as ordinary numbers.

- a) $10^{-2} =$
- b) $10^{-5} =$
- c) $10^{-8} =$

4



10^{-4} is greater than 10^2 as 4 is greater than 2

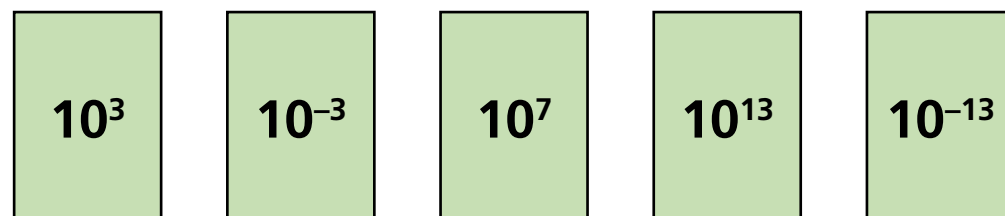
Is Whitney correct? _____

Explain your answer.

5 Write $<$ or $>$ to make these statements correct.

- a) 10^{-2} 10^2
- b) 10^7 10^4
- c) 10^{-8} 10^{-6}
- d) 10^8 10^6
- e) 10^{-7} 10
- f) 10^5 10^5
- g) 10^{-14} 10^{-13}
- h) 10^{-236} 10^1

6 What is the median of this set of numbers?

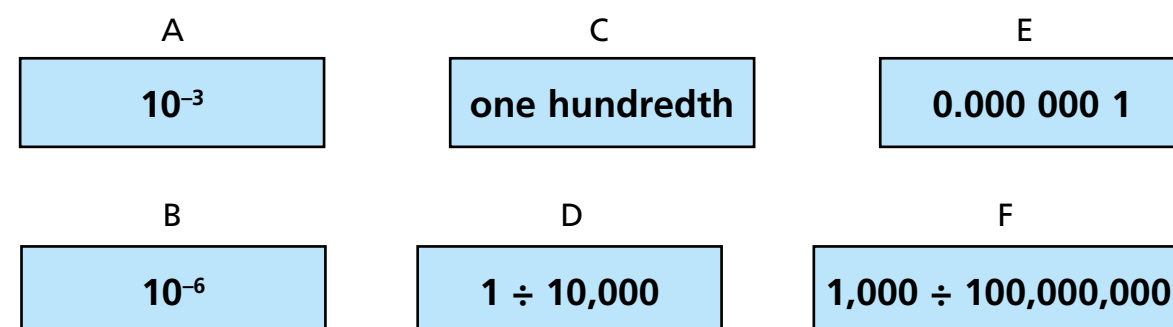


The median is

7 a) A millionth is the number formed by dividing 1 by a million.
Write a millionth as a power of 10

b) A quintillionth can be written as 0.000000000000000001
Write a quintillionth as a power of 10

8 Here are some number cards.



Put the number cards in ascending order.

9 a) What is the value of 10 hundredths as a power of 10?

b) What is the value of 1,000 tenths as a power of 10?

10 Solve the equation.
Write your answer as a power of 10

A whiteboard with a grey border and a drop shadow. It contains the equation $7x - 200,000 = 500,000$.
