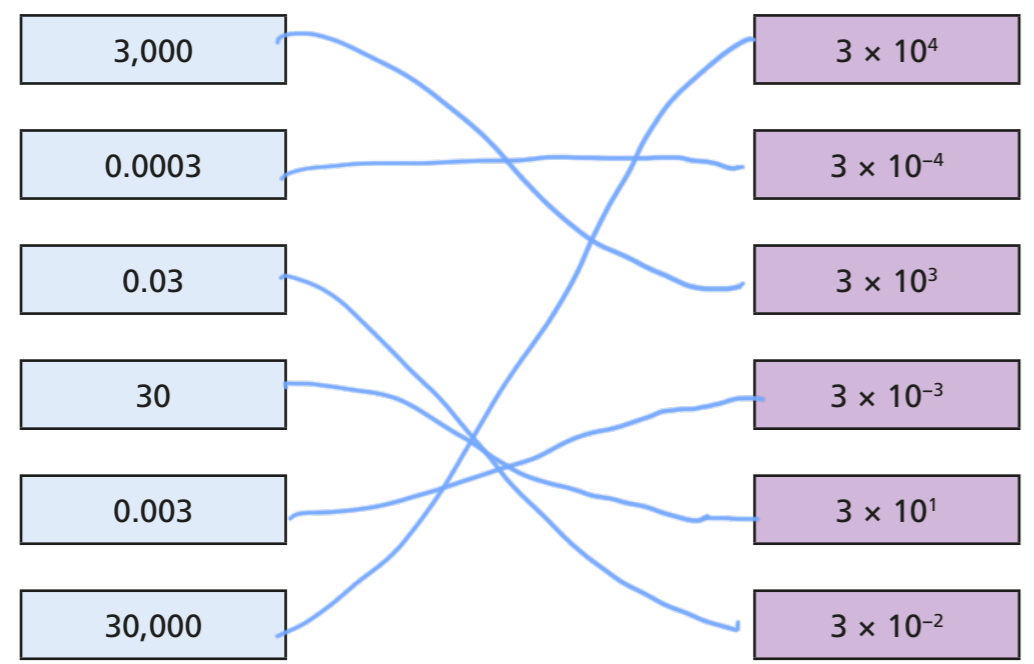


Add and subtract numbers given in standard form

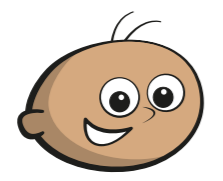
H



1 Match the ordinary numbers to their standard form equivalents.



2



$3 \times 10^5 + 4 \times 10^5 = 7 \times 10^{10}$

a) Convert the numbers to ordinary form and find their total to show that Tommy is incorrect.

$300,000 + 400,000 = 700,000$

Write the correct answer in standard form.

7×10^5

b) Complete the calculations. Write your answers in standard form.

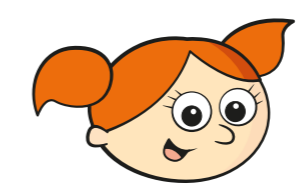
$3 \times 10^6 + 4 \times 10^6 = 7 \times 10^6$

$3 \times 10^8 + 4 \times 10^8 = 7 \times 10^8$

$3 \times 10^{17} + 4 \times 10^{17} = 7 \times 10^{17}$

$5 \times 10^{-3} + 4 \times 10^{-3} = 9 \times 10^{-3}$

3



$3 \times 10^5 + 7 \times 10^5 = 1 \times 10^6$

a) Convert the numbers to ordinary form and find their total to show that Alex is correct.

$300,000 + 700,000 = 1,000,000$

$1,000,000 = 1 \times 10^6$

b) Discuss with a partner why the index has changed when adding the two numbers.

c) Complete the calculations.

$3 \times 10^6 + 7 \times 10^6 = 1 \times 10^7$

$6 \times 10^8 + 4 \times 10^8 = 1 \times 10^9$

$5 \times 10^5 + 5 \times 10^5 = 1 \times 10^6$

$7 \times 10^{-2} + 3 \times 10^{-2} = 1 \times 10^{-1}$

$5 \times 10^{-4} + 5 \times 10^{-4} = 1 \times 10^{-3}$

4 Work out the calculations. Give your answers as ordinary numbers.

a) $8 \times 10^5 + 7 \times 10^4 =$

$8 \times 10^5 + 7 \times 10^5 =$

$8 \times 10^5 + 7 \times 10^6 =$

b) $8 \times 10^5 - 7 \times 10^4 =$

$8 \times 10^5 - 7 \times 10^3 =$

$8 \times 10^5 - 7 \times 10^2 =$

c) $8 \times 10^{-2} + 7 \times 10^{-1} =$

$8 \times 10^{-2} + 7 \times 10^{-2} =$

$8 \times 10^{-2} + 7 \times 10^{-3} =$

d) $8 \times 10^{-1} - 7 \times 10^{-2} =$

$8 \times 10^{-2} - 7 \times 10^{-4} =$

$8 \times 10^{-2} - 7 \times 10^{-5} =$

5 The table shows the approximate distances (in km) between Earth and some of the other planets. The distances are rounded to 1 significant figure.

Mercury				
7×10^7	Venus			
9×10^7	4×10^7	Earth		
2×10^8	1×10^8	8×10^7	Mars	
7×10^8	6×10^8	6×10^8	5×10^8	Jupiter

Write your answers in ordinary form.

a) How far is Venus from Jupiter? km

b) How much further is Earth from Jupiter than it is from Mars?

km

c) How much further is Mercury from Jupiter than it is from Venus?

km

d) Jupiter is approximately 2×10^9 km from Uranus.

How much further is this than the distance between Mercury and Venus?

km