Write decimals in the form A × 10^n

H

1 Write the missing number and power so that these numbers are written in standard form.

a) 0.0004 = [4] × 10 [-4]

b) 0.7 = [7] × 10 [-1]

c) 0.000 002 = [2] × 10 [-6]

d) 0.000 000 000 03 = [3] × 10 [-11]

2 Write these as ordinary numbers.

a) 8×10^{-5} = 0·00008

b) 5×10^{-8} = 0·000000005

c) 6×10^{-3} = 0·006

d) 5×10^{-1} = 0·5

3 Write these numbers in standard form.

a) 0.0009 = 9×10^{-4}

b) 0.000 003 = 3×10^{-6}

c) five tenths = 5×10^{-1}

d) two hundredths = 2×10^{-2}

e) 6 ÷ 100,000 = 6×10^{-5}

f) 0.000 004 × 100 = 4×10^{-4}

g) 0.02^3 = 8×10^{-6}

h) nine billionths = 9×10^{-9}

4 What is the same and what is different about each set of numbers?

a) 4×10^{-3} 6×10^{-3} 8×10^{-3}

The power of 10 is the same the integer is different.

b) 5×10^{-4} 5×10^{-3} 5×10^{-6}

The integer is the same, the power of 10 is different.

c) 8×10^{3} 8×10^{-3}

The integer is the same, one has a positive power of 10 the other is negative.

5 Solve the equations.

Give your answers in standard form.

a) $100g = 9$ $g =$ 9×10^{-2}

b) $4 = 10{,}000b$ $b =$ 4×10^{-4}

c) $6 = 2{,}000p$ $p =$ 3×10^{-3}

6 Circle the number that lies between 4×10^{-4} and 3×10^{-4}

0.00038 0.038 0.0038

7 Find the next three terms in the sequence.

Write the terms in standard form.

2×10^{-1}, 0.03, 4×10^{-3}, 5×10^{-4}, 6×10^{-5}, 7×10^{-6},

8

$$a = 2b + c$$

Find the value of a if $b = 5 \times 10^{-2}$ and $c = 2 \times 10^{-1}$

Write your answer in standard form.

3×10^{-1}

9 A printer's paper tray is 5 cm deep.

One sheet of paper is 8×10^{-3} cm thick.

What is the maximum number of sheets of paper that can fit in the tray?

625

10 Five numbers have a median of 9×10^{-2}

The range of the numbers is 0.35

One of the numbers is 0.1

Write the 5 numbers.

E.g. 5×10^{-2}, 8×10^{-2}, 9×10^{-2}, 1×10^{-1}, 4×10^{-1}

Is it possible to find more than one solution?