Convert small numbers to standard form

Maths

Mr Chan

Convert small numbers to standard form

1. Fill in the blanks.

$10^3 = \square$

$10^2 = 100$

$\square = 10$

$10^0 = \square$

$10^{-1} = \frac{1}{10^1} = \frac{1}{10} = 0.1$

$10^{-2} = \frac{1}{10^2} = \square = 0.01$

$10^{-3} = \frac{1}{10^3} = \frac{1}{1000} = \square$

2. Dora thinks that 5×10^{-3} is the same as 5×0.001

Show that Dora is correct.

3. Which of the following number cards correctly represents 0.003?

3×10^4

$\frac{1}{3000}$

$\frac{1}{30000}$

$\frac{1}{3^4}$

3×10^{-4}

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4. Write these numbers in standard form.

a) 0.004

b) 0.021

c) 0.007 01

d) 0.000 812

e) 0.000 009

f) 0.000 000 989

5. Violet light has a wavelength of approximately 0.000 000 4 m.
Write this number in standard form.

6. Here are some number cards.

0.000 4	3.2×10^2	4.3×10^3	0.00 32

Put them into order starting with the smallest.

Answers

Convert small numbers to standard form

1. Fill in the blanks

$10^3 = 1000$

$10^2 = 100$

$10^1 = 10$

$10^0 = 1$

$10^{-1} = \frac{1}{10^1} = \frac{1}{10} = 0.1$

$10^{-2} = \frac{1}{10^2} = \frac{1}{100} = 0.01$

$10^{-3} = \frac{1}{10^3} = \frac{1}{1000} = 0.001$

2. Dora thinks that 5×10^{-3} is the same as 5×0.001

Show that Dora is correct.

$10^{-3} = 0.001$ so the two calculations are the same.

3. Which of the following number cards correctly represents 0.003?

3×10^4

$\frac{1}{3000}$

$\frac{1}{30000}$

$\frac{1}{3^4}$

3×10^{-3}

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4. Write these numbers in standard form.

a) 0.004 = 4×10^{-3}

b) 0.021 = 2.1×10^{-2}

c) 0.007 01 = 7.01×10^{-3}

d) 0.000 812 = 8.12×10^{-4}

e) 0.000 009 = 9×10^{-6}

f) 0.000 000 989 = 9.89×10^{-7}

5. Violet light has a wavelength of approximately 0.000 000 4 m.
Write this number in standard form.

4×10^{-7} m

6. Here are some number cards.

0.000 4	3.2×10^2	4.3×10^3	0.00 32

Put them into order starting with the smallest.

0.000 4	0.00 32	3.2×10^2	4.3×10^3