1.7) Standard Form

Numbers:Standard Form.

$A \times 10^n$ → $1 \leq A < 10$

→ n is integer

Revien

$1 =$ $10 =$

$100 =$ $1000 =$

35000

Numbers:Standard Form.

240

40000

10500

573

54321

32

7

Numbers:Standard Form.

Review $0.12 =$ Or $0.003 =$

and $\frac{1}{1000} =$

$\frac{1}{100000} =$

and $10^m \times 10^n = 10^{m+n}$

0.0035

Numbers:Standard Form.

12.5

0.003

0.0105

0.00001

0.0004532

0.72

1.2

453.15

Numbers:Standard Form.

30.251×10^{5}

425×10^{-2}

0.25×10^{3}

0.25×10^{-4}

4900×10^{3}

4900×10^{-5}

0.00359×10^{m}

340000×10^{n}

0.00421×10^{2n}

Numbers:Standard Form.

Standard form $\longrightarrow$ Ordinary number

3.5×10^{7}

4.27×10^{-4}

1.000521×10^{2}

Numbers:Standard Form.

Give your answer in standard form.

Example : Calculator

1) $(9 \times 10^{8}) \times (4 \times 10^{7})$

2) $5.2 \times 10^{4} + 4.71 \times 10^{5}$

3) $\dfrac{4.2 \times 10^{5}}{3 \times 10^{-4}}$

4) $(5.21 \times 10^{-2}) - (2.5 \times 10^{-3})$

Numbers:Standard Form.

Give your answer in standard form.

Example : ~~Calculator~~

1) $(1.41 \times 10^{140}) + (4.2 \times 10^{141})$

Numbers:Standard Form.

2) $(4.25 \times 10^{130})(5.2 \times 10^{12})$

3) $\dfrac{(1.44 \times 10^{130})}{(1.5 \times 10^{125})}$

4) $\sqrt{1.44 \times 10^{140}}$

Numbers:Standard Form.

Extra : Expression in standard form.

$a \times 10^{5}$ where $10 < a < 100$

Numbers:Standard Form.

Extra : Expression in standard form.

$a \times 10^5$ where $100 < a < 1000$

Numbers:Standard Form.

Example : $X = P \times 10^n$ where n is an integer and $\sqrt{10} \leq P < 10$

Find, in standard form, an expression for X^2.

Give your expression as simply as possible.

Example : Each of the numbers A, B and C is greater than 1 and less than 10

$$A \times 10^8 + B \times 10^7 = C \times 10^8$$

Find an expression for C in terms of A and B

Numbers:Standard Form.

Example : Each of the numbers 3×10^{m}, 4×10^{n} and $p\times10^{r}$ is in standard form.

$$\frac{3\times10^{m}}{4\times10^{n}} = p\times10^{r}$$

(i) Find the value of p

(ii) Find an expression for r in terms of n and m