| Surname | |
|---|---|
| Other Names | |
| Candidate's Signature | |

# GCSE 9 - 1 Questions

## Standard Form

# Calculator Not Allowed

**INSTRUCTIONS TO CANDIDATES**

Write your name in the space provided.

Write your answers in the spaces provided in this question paper.

Answer ALL questions.

Any working should be clearly shown in the spaces provided since marks may be awarded for partially correct solutions.

You should have a ruler, compass and protractor where required.

**Total Marks :**

1) Express 13 million in standard form. [1]

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2) Evaluate each of the following giving all of your answers in **standard form**.

(a) $4 \cdot 5 \times 10^8 + 9 \cdot 4 \times 10^7$ [1]

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Answer in standard form: ...................................................

(b) $\dfrac{6 \times 10^{12}}{3 \times 10^{-6}}$ [1]

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Answer in standard form: ...................................................

(c) The product of 1000 and six million. [2]

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Answer in standard form: ...................................................

3) Find the value of $(9 \cdot 2 \times 10^5) - (3 \times 10^4)$. Give your answer in standard form. [2]

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4) Evaluate the following, giving your answer in standard form.

(a) $\dfrac{6 \cdot 3 \times 10^{12}}{12 \cdot 6 \times 10^{8}}$

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[2]

(b) $(8 \times 10^{2}) \times (3 \times 10^{6})$

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[2]

(c) $(3 \cdot 24 \times 10^{8}) + (1 \cdot 2 \times 10^{7})$

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[2]

5) Write 4 800 000 in standard form.

Answer _____ [1]

6) Write 0.0000624 in standard form.

Answer _____ [1]

7) Evaluate $2.34 \times 10^{13} + 1.6 \times 10^{12}$.
Give your answer in standard form. [2]

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8) *(a)* Express $0.000053$ in standard form.

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[1]

*(b)* Evaluate $(4.5 \times 10^7) \times (4 \times 10^5)$ giving your answer in standard form.

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[2]

9) Express each of the following numbers in standard form.

    *(a)*   0·000056                                                                  [1]

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    *(b)*   2 300 000 000                                                        [1]

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10)

    *(a)*   Write the number 0·000 000 38 in standard form.                           [1]

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    *(b)*   Evaluate $(1{\cdot}4 \times 10^8) \times 9000$, giving your answer in standard form.        [2]

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11)

Write the following numbers in standard form.

    *(a)*   0·000 000 053                                                            [1]

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    *(b)*   6 190 000 000 000                                                  [1]

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12)

Evaluate each of the following giving all of your answers in **standard form**.

(a)   $6 \cdot 4 \times 10^{10} + 7 \cdot 3 \times 10^{9}$                                                                                    [1]

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Answer in standard form = ........................................................

(b)   $\dfrac{8 \cdot 2 \times 10^{13}}{4 \cdot 1 \times 10^{-7}}$                                                                                    [1]

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Answer in standard form = ........................................................

(c)   The product of 1·3 million and 6 million.                                                  [2]

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Answer in standard form = ........................................................

13) Evaluate the following, giving each of your answers in standard form.

(a)   $(2 \cdot 5 \times 10^{6}) \times (8 \times 10^{3})$                                                                                    [2]

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*(b)*  $5 \times 10^8 + 6 \cdot 8 \times 10^9$  [2]

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14) Find, in standard form, the value of each of the following.

*(a)*  $\dfrac{7 \cdot 5 \times 10^6}{5000}$  [2]

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*(b)*  $(2 \cdot 3 \times 10^3) + (6 \cdot 4 \times 10^4)$  [2]

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15) The mass of the planet Jupiter is $1 \cdot 9 \times 10^{27}$ kg.

The mass of the planet Venus is $4 \cdot 87 \times 10^{24}$ kg.

**Approximately** how many times bigger is the mass of Jupiter than the mass of Venus?  [3]

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