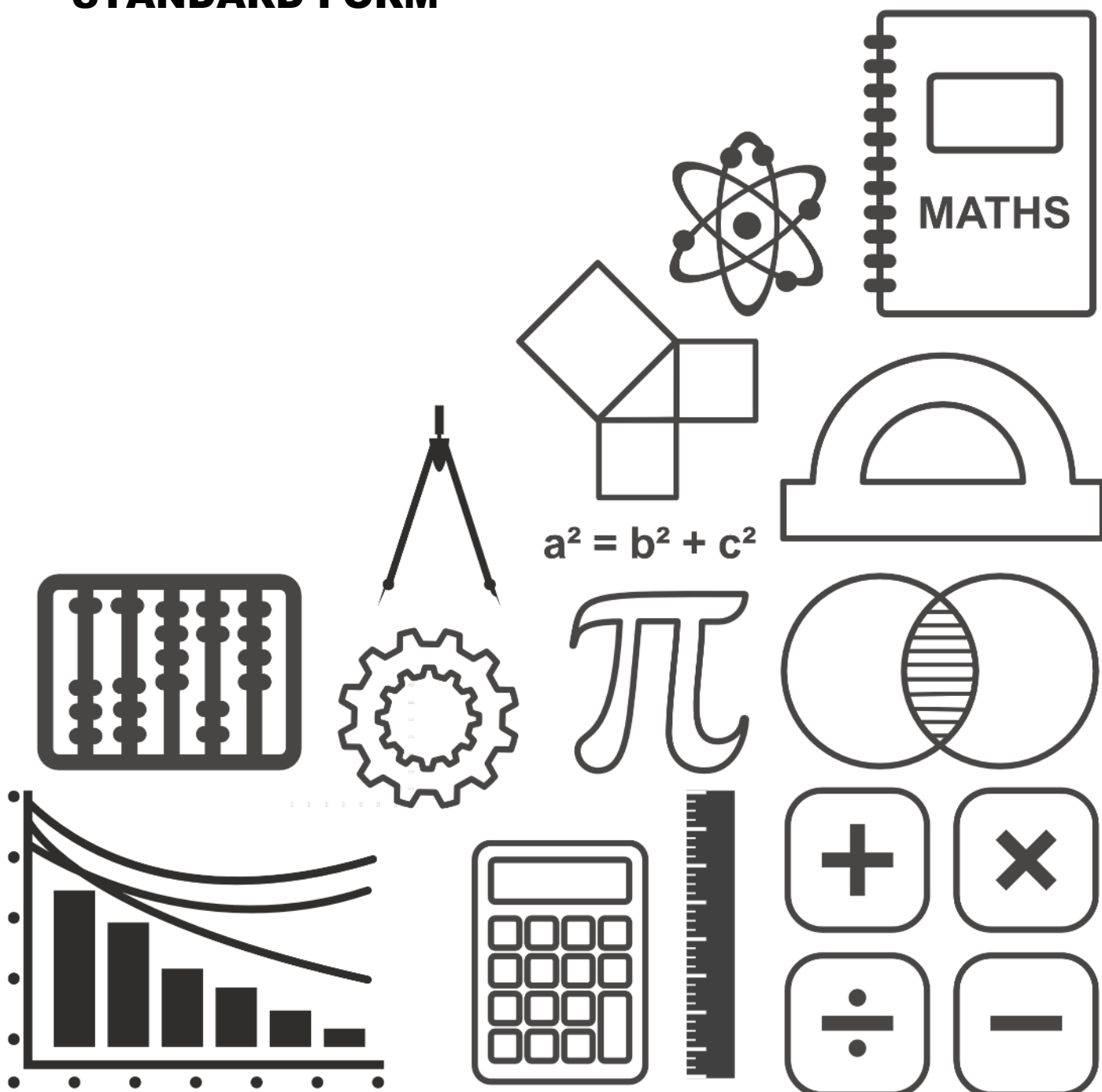


# MATHSDIY

## GCSE TOPIC BOOKLET STANDARD FORM



1. (a) Write **each** of the following numbers in standard form.

(i) 6 million

.....

(ii) 0.0043

..... [2]

(b) Find, in standard form, the value of  $(8.4 \times 10^3) \times (2 \times 10^5)$ .

.....

.....

..... [2]

2. (a) Write **each** of the following numbers in standard form.

(i) 7 000 000 000 000

..... [1]

(ii) 0.0000032

..... [1]

(b) Find, in standard form, the value of

$$\frac{5.3 \times 10^{-6}}{9.1 \times 10^5}$$

.....

..... [2]

3. The mass of the Earth is approximately  $6.0 \times 10^{24}$  kg and the mass of the Moon is approximately  $7.4 \times 10^{22}$  kg.

Giving your answer correct to the nearest whole number, how many times more is the mass of the Earth than the mass of the Moon.

.....

.....

.....

.....

Mass of the Earth = ..... × the mass of the Moon

[3]

4. (a) Write **each** of the following numbers in standard form.

(i) 23 million

.....

(ii) 0.00098

.....

[2]

(b) Find, in standard form, the value of  $(5.4 \times 10^3) \times (3 \times 10^5)$ .

.....

.....

.....

[2]

5. (a) Write **each** of the following numbers in standard form.

(i) 53 000 000 000

.....

[1]

(ii) 0.00000002

.....

[1]

(b) Find, in standard form, the value of:

$$(6.8 \times 10^{-5}) \times (7.3 \times 10^{-4})$$

.....

.....

[2]

6. Find, in standard form, the value of  $(2 \times 10^6) \times (6 \times 10^{-2})$ .

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.....

[2]

7. (a) Write the following numbers in standard form.

(i) 0.034

.....

(ii) six million

.....

[2]

(b) Calculate, giving your answers in standard form.

(i)  $(4.5 \times 10^{17}) \times (7.8 \times 10^{-11})$

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(ii)  $\frac{1.45 \times 10^{11}}{8.43 \times 10^{-4}}$

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[4]

8. Find, in standard form, the value of  $(3.7 \times 10^{-5}) \times (8.2 \times 10^{-6})$ .

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.....

[2]

9. (a) Write 0.0056 in standard form.

.....

[1]

(b) Find, in standard form, the value of  $(3 \times 10^5) \times (4 \times 10^{-3})$ .

.....

.....

.....

[2]

10. (a) Write **each** of the following numbers in standard form.

(i) 0.0047

.....

(ii) 32 000

.....

[2]

(b) Find, in standard form, the value of

$$(2.1 \times 10^{-5}) \times (3 \times 10^8).$$

.....

.....

[2]

11. (a) Write **each** of the following numbers in standard form.

(i) 3500

.....

(ii) 0.3

.....

[2]

(b) Arrange the following in ascending order.

$3 \times 10^4$

$3 \times 10^{-4}$

$10^2 \times 10^5$

$10^0$

.....

.....

.....

Smallest

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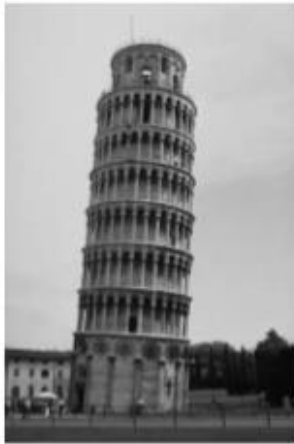
Largest

[2]

12. Information found on the Internet states that:



- the Eiffel Tower in Paris weighs approximately 8.56 million kg which is approximately 9 440 tons.



- the leaning tower in Pisa weighs approximately 14 500 tons.

Using this information, find the weight of the leaning tower in Pisa in kg, giving your answer in standard form.

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[4]

13. (a) Write each of the following numbers in standard form.

(i) 5800

(ii) 0.004

[2]

(b) Find, in standard form, the value of  $\frac{5.6 \times 10^6}{2 \times 10^{-3}}$ .

[2]

(c) Find the value of  $(8 \times 10^3) - (2 \times 10^3)$ .

[1]

14. Evaluate the following. Express your answer in standard form.

$$\frac{2^8 \times 5^2}{2^2}$$

[3]