



5.4F Standard Form: Foundation Tier Practice

EDEXCEL Edexcel 1MA1 · Calculator allowed · about 60 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Write 5600 in standard form.

(Total for Question 1 is 1 mark)

- 2** Write 0.0072 in standard form.

(Total for Question 2 is 1 mark)

- 3** Write 9.3×10^2 as an ordinary number.

(Total for Question 3 is 1 mark)

- 4** Write 4.05×10^{-1} as an ordinary number.

(Total for Question 4 is 1 mark)

- 5** A small marble has mass 0.00038 kg. Give the mass of the marble in standard form to two significant figures.

(Total for Question 5 is 2 marks)

6 Write each of the following in standard form.

(a) 12000

(b) 0.00056

(a) 12000

(2)

(b) 0.00056

(2)

(Total for Question 6 is 4 marks)

7 A school measures the length of a small model as 0.023 m. A real object is 2.3×10^3 times longer than the model. Work out the length of the real object in standard form.

(a) Write 0.023 in standard form.

(1)

(b) Use your answer to part (a) to find the real length in standard form.

(3)

.....
(Total for Question 7 is 4 marks)

8 Write 0.00000042 in standard form then give the number of zeros between the decimal point and the first non-zero digit.

(a) Write 0.00000042 in standard form.

(3)

(b) State how many zeros appear between the decimal point and the 4 in the original number.

(2)

(Total for Question 8 is 5 marks)

- 9** A small satellite has mass 4.8×10^3 kg. Another satellite has mass 0.0096×10^6 kg. Are the two masses equal? Show your working and give your answer in ordinary numbers.

(Total for Question 9 is 6 marks)

Mark scheme · 5.4F Standard Form: Foundation Tier Practice

Question 1

- **B1** 5.6×10^3 cao
- **Answer:** 5.6×10^3

Question 2

- **B1** 7.2×10^{-3} cao
- **Answer:** 7.2×10^{-3}

Question 3

- **B1** 930 cao
- **Answer:** 930

Question 4

- **B1** 0.405 cao
- **Answer:** 0.405

Question 5

- **M1** convert 0.00038 to 3.8×10^{-4} or show appropriate rounding
- **A1** 3.8×10^{-4} cao
- **Answer:** 3.8×10^{-4}

Question 6

- (a) **M1** show $12000 = 1.2 \times 10^4$ or equivalent method
- (a) **A1** 1.2×10^4 cao
- (a) **Answer:** 1.2×10^4
- (b) **M1** show $0.00056 = 5.6 \times 10^{-4}$ or equivalent
- (b) **A1** 5.6×10^{-4} cao
- (b) **Answer:** 5.6×10^{-4}

Question 7

- (a) **B1** 2.3×10^{-2} cao
- (a) **Answer:** 2.3×10^{-2}
- (b) **M1** multiply 2.3×10^{-2} by 2.3×10^3 or show $2.3 \times 2.3 \times 10^{-2+3}$
- (b) **M1** evaluate product 5.29×10^1 or show 5.29×10^1
- (b) **A1** 5.29×10^1 cao
- (b) **Answer:** 5.29×10^1

Question 8

- (a) **M1** move decimal to give 4.2×10^{-7} or equivalent method
- (a) **A1** 4.2×10^{-7} cao
- (a) **A1** correct power and coefficient stated
- (a) **Answer:** 4.2×10^{-7}
- (b) **B1** 6 zeros cao
- (b) **B1** explicit count or statement
- (b) **Answer:** 6

Question 9

- **M1** convert 4.8×10^3 to ordinary number or show method
- **A1** 4800 cao
- **M1** convert 0.0096×10^6 to ordinary number or show method (0.0096×10^6)
- **A1** 9600 cao
- **M1** compare the two numbers and state whether equal or not with working
- **A1** conclusion: not equal, 4800 and 9600 cao
- **Answer: No. $4.8 \times 10^3 = 4800 \text{ kg}$. $0.0096 \times 10^6 = 0.0096 \times 1000000 = 9600 \text{ kg}$. The masses are not equal.**