FOUNDATION & HIGHER

SAME AT BOTH TIERS

Name ..... Class .....

N9: Standard form

Calculate with and interpret standard form

20 marks · 25 minutes · Non-calculator

1) Write in standard form.

(a) 45 000

.....

(1)

(b) 0.00072

.....

(1)

[Question 1: 2 marks]

2) Write as an ordinary number.

(a) 3.08×10^5

.....

(1)

(b) 6×10^{-3}

.....

(1)

[Question 2: 2 marks]

3) Work out $(3 \times 10^4) \times (2 \times 10^5)$. Give your answer in standard form.

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[Question 3: 2 marks]

4) Work out $(8 \times 10^7) \div (4 \times 10^{-2})$. Give your answer in standard form.

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[Question 4: 2 marks]

5) Work out $(6 \times 10^5) \times (5 \times 10^3)$. Give your answer in standard form.

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[Question 5: 2 marks]

6) Work out $(4.5 \times 10^6) + (3 \times 10^5)$. Give your answer in standard form.

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[Question 6: 2 marks]

7) Write in order, smallest first: 3.2×10^4, 5.1×10^3, 0.6×10^5, 2.9×10^4

.....

[Question 7: 2 marks]

8) Write 34×10^6 in standard form.

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[Question 8: 1 marks]

9) Work out $(9 \times 10^8) \div (3 \times 10^{12})$. Give your answer in standard form.

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[Question 9: 2 marks]

10) A grain of sand has a mass of 6×10^{-4} grams. How many grains of sand have a total mass of 1.2 kg? Give your answer in standard form.

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[Question 10: 3 marks]

End of paper – 20 marks in total

Answers and brief mark scheme

Q	Answer	Method / notes
1	(a) 4.5×10^4 (b) 7.2×10^{-4}	B1 each.
2	(a) 308 000 (b) 0.006	B1 each.
3	6×10^9	6×10^9 seen or 3×2 (M1); A1.
4	2×10^9	$2 \times 10^{7-(-2)}$ (M1); A1.
5	3×10^9	30×10^8 (M1); A1.
6	4.8×10^6	4 500 000 + 300 000 (M1); A1.
7	5.1×10^3, 2.9×10^4, 3.2×10^4, 0.6×10^5	Convert to comparable form (M1); A1.
8	3.4×10^7	B1.
9	3×10^{-4}	3×10^{-4} or 0.0003 (M1); A1.
10	2×10^6	1200 g (M1); $1200 \div (6 \times 10^{-4})$ (M1); A1.