STANDARD FORM

Task 1

1) Write 5,200 in standard form.
$$5.2 \times 10^3$$

2) Write 4.7 × 10³ as an ordinary number.
4,700

3) Write 8,900,000 in standard form.
$$8.9 \times 10^6$$

4) Write 3.1 × 10⁵ as an ordinary number.
310,000

5) Write 7,000 in standard form.
$$7 \times 10^3$$

6) Write 9.45 × 10⁶ as an ordinary number.
9,450,000

7) Write 1,020 in standard form.
$$1.02 \times 10^3$$

8) Write 82,000 in standard form.
$$8.2 \times 10^4$$

9) Write 4.002 × 10⁷ as an ordinary number.
40,020,000

10) Write 4 million in standard form.
$$4 \times 10^6$$

Task 2

11) Write 0.0035 in standard form.
$$3.5 \times 10^{-3}$$

12) Write 2.1 × 10⁻⁴ as an ordinary number.
0.00021

13) Write 0.000009 in standard form.
$$9 \times 10^{-6}$$

14) Write 6.8 × 10⁻² as an ordinary number.
0.068

15) Write 0.045 in standard form.
$$4.5 \times 10^{-2}$$

16) Write 7.08 × 10⁻⁵ as an ordinary number.
0.0000708

17) Write 0.00031 in standard form.
$$3.1 \times 10^{-4}$$

18) Write 5.03 × 10⁻³ as an ordinary number.
0.00503

19) Write 0.00000042 in standard form.
$$4.2 \times 10^{-7}$$

20) Write 1.005 × 10⁻⁶ as an ordinary number.
0.000001005

Task 3

21) The population of Town A is 3.2 × 10⁵ and the population of Town B is 280,000. Which town has more people?
Town A has 320,000; **Town A**

22) Which is larger: 7.5 × 10⁶ or 75,000,000?
$75,000,000 = 7.5 \times 10^7$; **75,000,000**

23) A grain of sand has a mass of 5.6 × 10⁻⁴ grams. Write this in ordinary form.
0.00056 grams

24) Which is smaller: 0.00023 or 3.1 × 10⁻⁵?
$3.1 \times 10^{-5} = 0.000031$; **3.1 × 10⁻⁵**

25) A library has 8.09 × 10⁴ books. Write the number of books as an ordinary number.
80,900 books

26) Which is larger: 4.3 × 10⁻⁴ or 0.00043?
$4.3 \times 10^{-4} = 0.00043$
The numbers are equal.

27) The Sun is 1.496 × 10⁸ km away from Earth. Write this distance as an ordinary number.
149,600,000 km

28) Which is larger: 2.15 × 10³ or 21,500?
$2.15 \times 10^3 = 2,150$; **21,500**

29) A virus is 0.000000075 m in length. Write this in standard form.
$$7.5 \times 10^{-8}$$

30) Write the following numbers in order of size, starting with the smallest number.
5.2×10^2 0.0052×10^3 5200×10^{-4} 52
$5.2 \times 10^2 = 520$
$0.0052 \times 10^3 = 5.2$
$5200 \times 10^{-4} = 0.52$

5200×10^{-4}, 0.0052×10^3,   52, 5.2×10^2

31) Write the following numbers in order of size, starting with the smallest number.
48×10^0 4.8×10^2 0.048×10^5 480×10^{-2}
$48 \times 10^0 = 48$
$4.8 \times 10^2 = 480$
$0.048 \times 10^5 = 4800$
$480 \times 10^{-2} = 4.8$

480×10^{-2}, 48×10^0, 4.8×10^2, 0.048×10^5

Challenge – Write the following numbers in standard form.

32) 24.6×10^4

2.46×10^5

33) 0.034×10^5

3.4×10^3

34) 267.8×10^8

2.678×10^{10}

35) 0.00067×10^2

6.7×10^{-2}

36) 0.000009×10^{-3}

9×10^{-9}

37) $7,000,000 \times 10^{-6}$

7×10^0

38) 0.000485×10^2

4.85×10^{-2}

39) 0.0021×10^{-7}

2.1×10^{-10}

40) $4,567,000 \times 10^{-4}$

4.567×10^2