A number in Scientific Form has two components

It has a decimal component and an index component with base 10

$$0.0042 = 4.2 \times 10^{-3} \qquad 21{,}000 = 2.1 \times 10^{4}$$

Write down the value of ab in standard form if

$$(4.2 \times 10^{-3})(2.1 \times 10^{4}) = (4.2 \times 2.1)(10^{-3} \times 10^{4})$$
$$= (8.82) \times (10^{(-3+4)}) = 8.82 \times 10^{1}$$

1. $a = 2.1 \times 10^{2}$, $b = 4 \times 10^{3}$ = _____ × 10 _____
2. $a = 5.4 \times 10^{4}$, $b = 2 \times 10^{5}$ = _____ × 10 _____
3. $a = 7 \times 10^{-2}$, $b = 2.2 \times 10^{-3}$ = _____ × 10 _____
4. $a = 5 \times 10^{-4}$, $b = 2.3 \times 10^{-2}$ = _____ × 10 _____
5. $a = 1.6 \times 10^{-2}$, $b = 2 \times 10^{4}$ = _____ × 10 _____
6. $a = 6 \times 10^{5}$, $b = 1.3 \times 10^{-7}$ = _____ × 10 _____

Write down the value of p/q in standard form if

$$(4.2 \times 10^{-3}) \div (2.1 \times 10^{4}) = (4.2 \div 2.1) \times (10^{-3} \div 10^{4})$$
$$= (2) \times (10^{(-3-4)}) = 2 \times 10^{-7}$$

7. $p = 6 \times 10^{5}$, $q = 3 \times 10^{2}$ = _____ × 10 _____
8. $p = 1.4 \times 10^{8}$, $q = 2 \times 10^{3}$ = _____ × 10 _____
9. $p = 9 \times 10^{3}$, $q = 3 \times 10^{5}$ = _____ × 10 _____
10. $p = 7 \times 10^{-3}$, $q = 5 \times 10^{2}$ = _____ × 10 _____
11. $p = 1.8 \times 10^{-3}$, $q = 6 \times 10^{-4}$ = _____ × 10 _____
12. $p = 2.5 \times 10^{4}$, $q = 2 \times 10^{-4}$ = _____ × 10 _____

Write down the value of $x + y$ in standard form if

13. $x = 2 \times 10^{2}$, $y = 3 \times 10^{3}$ = $200 + 3{,}000 = 3{,}200 = 3.2 \times 10^{3}$

14. $x = 3 \times 10^{-2}$, $y = 2 \times 10^{-3}$ = _____ + _____ = _____ × 10 _____
15. $x = 2.1 \times 10^{4}$, $y = 3.1 \times 10^{5}$ = _____ + _____ = _____ × 10 _____
16. $x = 1.3 \times 10^{-4}$, $y = 4 \times 10^{-3}$ = _____ + _____ = _____ × 10 _____
17. $x = 1.9 \times 10^{-3}$, $y = 2.4 \times 10^{-2}$ = _____ + _____ = _____ × 10 _____
18. $x = 3 \times 10^{5}$, $y = 2.5 \times 10^{6}$ = _____ + _____ = _____ × 10 _____

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