문제 3. 아래 계산을 유효숫자를 고려하여 계산하여라.

답:

(1) For addition, we round the result up to the largest decimal of the participating numbers

$$4.8\underline{7} + 12.\underline{3} = 17.\underline{1}7 = 17.\underline{2} \tag{1}$$

(2) For multiplication, we round the result up to the smallest significant figures of the participating numbers. Here the smallest significant figures is 2.

$$0.0035 \times 0.0789 = 0.00028 \tag{2}$$

(3) For division, the rule is similar with that for multiplication. Here the smallest significant figures is 4.

$$\frac{423.5}{76.265} = 5.553 \tag{3}$$

(4) Similar with number 1, however we need to match the exponent first.

$$(3.13\underline{4} + 0.23\underline{4}) \times 10^3 = 3.36\underline{8} \times 10^3 \tag{4}$$

(5) Do the multiplication first, after that the subtraction. The rule for subtraction is similar with that for addition. The smallest significant figures for multiplication is 3.

$$25.4 \times 52.34 = 1.33 \times 10^3 \tag{5}$$

Before subtracting, we need to match the exponent first

$$(1.3\underline{3} - 0.027453\underline{3}) \times 10^3 = 1.3\underline{0} \times 10^3 \tag{6}$$

Note that the last 0 of the final result is also significant figure.