

## Student Learning Advisory Service

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Please come and see us if you need any academic advice or guidance.

### Canterbury

Our offices are next to Santander Bank

### Open

Monday to Friday, 09.00 – 17.00

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### Open

Monday to Friday, 09.00 – 17.00

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The Student Learning Advisory Service (SLAS) is part of the Unit for the Enhancement of Learning and Teaching (UFLT)

## Acknowledgments

All materials checked by Dr Scott Wildman, Dr Cleopatra Branch, Jerome Durodie and Andrew Lea, Medway School of Pharmacy, Anson Building, Central Avenue, Chatham Maritime, Chatham, Kent. ME4 4TB.

This leaflet has been produced in conjunction with **sigma** Network for Excellence in Mathematics and Statistics Support



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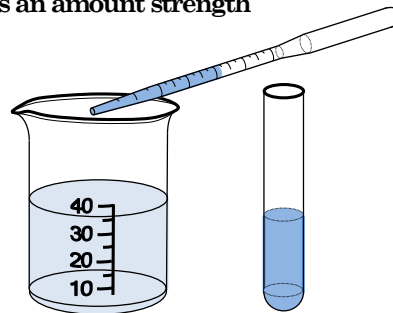
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# AT A GLANCE/ PHARMACY CALCULATIONS AMOUNT STRENGTHS

Calculating the amount of substance in a concentration expressed as an amount strength



### Example 1

How much bismuth subsalicylate is contained in a 236mL bottle of 17.6mg/mL concentration?

### Method

**Step 1:** An amount strength is a fraction.

$$\text{Thus ... } 17.6\text{mg/mL} = \frac{17.6\text{mg}}{1\text{mL}}$$

**Step 2:** By multiplication

$$\frac{17.6\text{mg}}{1\text{mL}} \times 236\text{mL} = 4153.6\text{mg} \checkmark$$

### Example 2

How much sodium (Na) is contained in 50mL of a 2g/L concentration

### Method

**Step 1:** Convert the amounts to common units (mL).

$$\text{Thus ... } 2\text{g/L} = \frac{2\text{g}}{1000\text{mL}}$$

**Step 2:** By multiplication

$$\frac{2g}{1000mL} \times 50mL = 0.1g \checkmark$$

### Example 3

If a 5mL spoonful of Cough-Max expectorant contains 100mg of guaifenesin, how many g will be contained in a 228mL bottle?

### Method

**Step 1:** Using  $c_1/V_1 = c_2/V_2$

$$\frac{100mg}{5mL} = \frac{x (mg)}{228mL}$$

**Step 2:** Transpose for  $x$  and solve

$$x = \frac{100 \times 228}{5} = 4560mg = 4.56g \checkmark$$

### Example 4

If a product should contain 2.4mcg/100mcL, how many mg will be required to make up 2.5L?

### Method

**Step 1:** Convert the amounts to common units (mL).

*Thus ... 2.4mcg/0.1mL and 2500mL*

**Step 2:** Using  $c_1/V_1 = c_2/V_2$

$$\frac{2.4mcg}{0.1mL} = \frac{x (mcg)}{2500mL}$$

**Step 3:** Transpose for  $x$  and solve

$$x = \frac{2.4 \times 2500}{0.1} = 60,000mcg = 60mg \checkmark$$

### Q1

How much active ingredient is contained in the following?

- |    |                     |
|----|---------------------|
| a) | 50mL of 0.2mL/100mL |
| b) | 100mL of 120mcL/mL  |
| c) | 0.2mL of 3mg/mL     |
| d) | 0.5L of 2mcg/mL     |
| e) | 200mg of 5mcg/mg    |
| f) | 200mg of 10g/kg     |
| g) | 120mL of 1.4mcL/mL  |
| h) | 50g of 0.2g/g       |
| i) | 330mL of 0.27g/15mL |
| j) | 5mL of 0.6g/30mL    |

### Q2

How much active ingredient is contained in the following?

- |    |                     |
|----|---------------------|
| a) | 30mL of 0.4mL/mL    |
| b) | 750mL of 50mcL/mL   |
| c) | 4.7L of 80mg/100mL  |
| d) | 5L of 35mcg/100mL   |
| e) | 6L of 22mcg/100mL   |
| f) | 564mL of 5mL/100mL  |
| g) | 4500mL of 72mg/dL   |
| h) | 1500L of 5mcg/mL    |
| i) | 225mL of 250mg/15mL |
| j) | 0.25kg of 0.2mcg/mg |

### Answers

**Q1** a) = 0.1mL. b) = 12mL. c) = 0.6mg. d) = 1mg. e) = 1mg. f) = 2mg. g) = 168mcL. h) = 10g. i) = 5.94g. j) = 0.1g.

**Q2** a) = 12mL. b) = 37.5mL. c) = 3.76g. d) = 1.75mg. e) = 1.32mg. f) = 28.2mL. g) = 3.24g. h) = 7.5g. i) = 3.75g. j) = 50mg.