### Chapter 14: Basic Mathematics

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>5 doses</td>
</tr>
<tr>
<td>18</td>
<td>10 hours</td>
</tr>
<tr>
<td>19</td>
<td>2 hours</td>
</tr>
<tr>
<td>20</td>
<td>45.67</td>
</tr>
<tr>
<td>21</td>
<td>30.08</td>
</tr>
<tr>
<td>22</td>
<td>26.23</td>
</tr>
<tr>
<td>23</td>
<td>9.04 mL/minute</td>
</tr>
<tr>
<td>24</td>
<td>( \frac{3}{24} = \frac{1}{8} )</td>
</tr>
<tr>
<td>24</td>
<td>( \frac{10}{24} = \frac{5}{12} )</td>
</tr>
<tr>
<td>24</td>
<td>( \frac{8}{24} = \frac{1}{3} )</td>
</tr>
<tr>
<td>25</td>
<td>( \frac{33}{4} )</td>
</tr>
<tr>
<td>25</td>
<td>( \frac{47}{16} )</td>
</tr>
<tr>
<td>25</td>
<td>( \frac{67}{2} )</td>
</tr>
<tr>
<td>26</td>
<td>( \frac{130}{8} = \frac{65}{4} )</td>
</tr>
<tr>
<td>26</td>
<td>( \frac{61}{7} )</td>
</tr>
<tr>
<td>26</td>
<td>( \frac{9}{12} )</td>
</tr>
<tr>
<td>26</td>
<td>( \frac{10}{16} )</td>
</tr>
<tr>
<td>26</td>
<td>( \frac{15}{27} )</td>
</tr>
<tr>
<td>29</td>
<td>a. 1</td>
</tr>
<tr>
<td>29</td>
<td>b. 1</td>
</tr>
<tr>
<td>29</td>
<td>c. 1</td>
</tr>
<tr>
<td>29</td>
<td>d. 1</td>
</tr>
<tr>
<td>29</td>
<td>e. 10</td>
</tr>
<tr>
<td>29</td>
<td>f. 10</td>
</tr>
<tr>
<td>30</td>
<td>a. ( \frac{7}{18} )</td>
</tr>
<tr>
<td>30</td>
<td>b. ( \frac{1}{6} )</td>
</tr>
<tr>
<td>30</td>
<td>c. ( \frac{9}{36} )</td>
</tr>
</tbody>
</table>
31. a. $\frac{1}{16}$  
b. $\frac{3}{8}$  
c. $\frac{4}{9}$  
d. $\frac{21}{32}$  
e. $\frac{49}{72}$

32. a. $\frac{4}{21}$  
b. $\frac{10}{27}$  
c. $\frac{33}{5}$  
d. $\frac{1}{4}$  
e. $\frac{7}{16}$

33. a. $\frac{1}{2}$  
b. $\frac{2}{3}$  
c. $\frac{3}{5}$  
d. $\frac{7}{16}$  
e. $\frac{39}{112}$

34. a. $\frac{1}{12}$  
b. $\frac{1}{40}$  
c. $\frac{5}{12}$  
d. $\frac{117.0}{5}$  
e. $\frac{152.95}{112}$

35. a. $\frac{9}{40}$  
b. $\frac{1}{3}$  
c. $\frac{1}{9}$  
d. $\frac{7}{16}$  
e. $\frac{39}{112}$

36. a. 115.252  
b. 169.3  
c. 4.849  
d. 117.0  
e. 152.95

37. a. 9.1  
b. 6.29  
c. 5.9  
d. 2.87  
e. 7.9

38. a. 0.35  
b. 0.006  
c. 0.045  
d. 7490  
e. 30.8

39. a. 0.02  
b. 0.21  
c. 0.28  
d. 0.04  
e. 0.04

40. a. 58  
b. 58  
c. 26  
d. 28  
e. 3

41. a. 249.9  
b. 108.5  
c. 0.7  
d. 0.1  
e. 10.1

42. a. $\frac{137}{1000}$  
b. $\frac{933}{1000}$  
c. $\frac{6}{25}$  
d. $\frac{23}{20}$  
e. $\frac{3}{5}$

43. a. 4.6  
b. 0.9  
c. 5.9  
d. 2.5  
e. 6.6

44. a. 1:20  
b. 5:20  
c. 10:100  
d. 25:100  
e. 1:2
CHAPTER 2: UNITS OF MEASUREMENT

1 a 0.014 g
   b 0.22 mg
   c 0.55 mL
   d 0.0005 mL
   e 0.98 mL

48 a 0.16
   b 0.22
   c 0.55
   d 0.0005
   e 0.98

49 a 20%
   b 50%
   c 75%
   d 28%
   e 80%

50 a \frac{9}{50}
   b \frac{7}{25}
   c \frac{57}{100}
   d \frac{47}{50}
   e \frac{1}{50}

2 a 1000 mg, which is 2 tablets
   b 500 mg, which is 2 capsules
   c 125 microg, which is 2 tablets
   d 1200 mg, which is 3 tablets
   e 1250 mL

3 a 1200 mg
   b 700 mg
   c 50 microg
   d 2300 microg
   e 1070000 microg
   f 1400000 g
   g 0.006 mg is smaller
   h 0.06 mg is smaller
   i 6 microg is smaller
   j 0.0006 mg is smaller
4  

a  Administer 0.75 mL

b  Administer 1.7 mL

c  Administer 2.2 mL
d  Administer 1.3 mL

f  Administer 65 units of insulin
g  Administer 27 units of insulin

h  Administer 75 units of insulin

i  Administer 4.4 mL
j  Administer 16 mL

k  0.2 mL

l  1 mL

m  0.2 mL
The patients could be given each other’s medication without the nurse having the ability to check the identification of the correct patient.

Potential for anaphylaxis and death if one of the patients is allergic to the other’s medications.

Present medical conditions may not be treated by other person’s medicine. In fact, this could lead to life-threatening ramifications. Mrs Brown would not be able to have surgery if she received antihypertensive or hypoglycaemic agents, or warfarin, which is used for atrial fibrillation.
Potential outcomes for Christine:
Anaphylaxis because she is allergic to penicillin.

Potential outcomes for Christopher:
He may have adverse reactions to the other medicines on Christine's medication chart.

The areas in the patient identification panel that would prevent these errors from being made are:
• URN
• address
• date of birth
• sex/gender.

Note: any allergies will be recorded in the allergy section of the medication chart.
### Once only and nurse initiated medicines and pre-medication

<table>
<thead>
<tr>
<th>Date prescribed</th>
<th>Medicine (print generic name)</th>
<th>Route</th>
<th>Dose</th>
<th>Date/time of dose</th>
<th>Prescriber/Nurse Initiator (NI)</th>
<th>Given by</th>
<th>Time given</th>
<th>Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>21/9/15</td>
<td>Refresh tears</td>
<td>cyclos</td>
<td>1</td>
<td>21.9/1435</td>
<td>N.J.</td>
<td>N. JAMES</td>
<td>1435</td>
<td></td>
</tr>
</tbody>
</table>

**Once Only**

Date: 21/9/15  
**Medicine:** Refresh tears  
Dose: 1  
Units: drop  
Route: cyc drop  
Prescriber’s signature: N.James  
Time commenced: 1435  
Date & time of dose: 21.9/1435  
Pharmacy & special instructions:  
Pharm:  
Time completed: 1440  
Checked by: S.S.
Facility/service: __________________________
Ward/unit: ______________________________

Medicine chart no. ________________________ of ____________

Once only and nurse initiated medicines and pre-medication

<table>
<thead>
<tr>
<th>Date prescribed</th>
<th>Medicine (print generic name)</th>
<th>Route</th>
<th>Dose</th>
<th>Date/time of dose</th>
<th>Prescriber/Nurse Initiator (NI)</th>
<th>Given by</th>
<th>Time given</th>
<th>Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>14/4/15</td>
<td>Normal saline</td>
<td>iv</td>
<td>5 mL</td>
<td>14/4/17 14:45</td>
<td>C Johns</td>
<td>C Johns</td>
<td>1800</td>
<td></td>
</tr>
</tbody>
</table>

Once Only

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine</th>
<th>Dose</th>
<th>Units</th>
<th>Route</th>
<th>Prescriber’s signature</th>
<th>Time commenced</th>
<th>Given by</th>
</tr>
</thead>
<tbody>
<tr>
<td>14/4/15</td>
<td>Normal saline</td>
<td>5 mL</td>
<td>iv</td>
<td>14/4/17 14:45</td>
<td>C Johns</td>
<td>1800</td>
<td>N1</td>
</tr>
</tbody>
</table>

Telephone orders (to be signed within 24 hours of order)

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine (print generic name)</th>
<th>Route</th>
<th>Dose</th>
<th>Frequency</th>
<th>Check initials</th>
<th>Prescriber name</th>
<th>Pres. sign</th>
<th>Date</th>
<th>Record of administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/10</td>
<td>Fexofenadine</td>
<td>PO</td>
<td>180 mg</td>
<td>mane</td>
<td>NJ</td>
<td>HW</td>
<td>Rose</td>
<td>15/10</td>
<td>10/10/20</td>
</tr>
</tbody>
</table>

Phone orders
### Verbal Orders (must be signed as soon as possible or within 24 hours of order)

<table>
<thead>
<tr>
<th>Date and Time</th>
<th>Medicine</th>
<th>Dose</th>
<th>Units</th>
<th>Route</th>
<th>Dose calculation (eg. mg/kg per dose)</th>
<th>Date &amp; time of dose</th>
<th>Initials: Nurse</th>
<th>Initials: Witness</th>
<th>Time commenced</th>
<th>Time completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/10 1000</td>
<td></td>
<td>150</td>
<td>mg</td>
<td>PO</td>
<td></td>
<td>15/10/15 1000</td>
<td>NJ</td>
<td>HW</td>
<td>1010</td>
<td>1010</td>
</tr>
</tbody>
</table>

Dose range if needed: 

Prescriber’s name: Rose

Pharmacist:

Checked by:

J Grace

---

### Regular medicines

**Year 2015**

**Date and month:**

20/8

**PRESCRIBER MUST ENTER administration times**

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine (print generic name)</th>
<th>Tick if slow release</th>
<th>Frequency and NOW enter times</th>
<th>Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>20/8</td>
<td>lamotrigine</td>
<td></td>
<td>0800</td>
<td>N3</td>
</tr>
</tbody>
</table>

**Indication:**

Epilepsy

**Prescriber signature:**

J Grace

**Dispense?**

Yes / No

**Continue on discharge?**

Yes / No

**Dispense for:**

6 days

**Continue:**

6 days

**Contact:**

327

---

**Clinical Dosage Calculations Answers**

CHAPTER 14

Answers

Clinical Dosage Calculations
### Regular medicines

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Dose</th>
<th>Units</th>
<th>Route</th>
<th>Frequency</th>
<th>Dose calculation</th>
<th>Prescriber’s signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>0800</td>
<td>100</td>
<td>mg PO</td>
<td>BD</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dose range if needed:**

**Pharmacy & special instructions:**

**Pharm:**

**Sign, date and time to cancel:**

---

**Circle or actual time:**

<table>
<thead>
<tr>
<th>H</th>
<th>0800</th>
<th>100</th>
<th>mg PO</th>
<th>BD</th>
</tr>
</thead>
</table>

---

**Regular medicines**

**Year 20**

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine [print generic name]</th>
<th>Route</th>
<th>Dose</th>
<th>Frequency</th>
<th>Administration times</th>
</tr>
</thead>
<tbody>
<tr>
<td>20/8</td>
<td>bisoprolol</td>
<td>PO</td>
<td>10 mg</td>
<td>mane</td>
<td>0800 NJ</td>
</tr>
</tbody>
</table>

**Tick if slow release:**

**Indication:**

**Hypertension**

**Prescriber signature:**

**J. Grace**

**#327**
### Regular medicines

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine</th>
<th>Dose</th>
<th>Units</th>
<th>Route</th>
<th>Frequency</th>
<th>Dose calculation</th>
<th>Prescriber’s signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>20/8</td>
<td></td>
<td>10</td>
<td>mg</td>
<td>PO</td>
<td>Once daily</td>
<td></td>
<td>J Grace</td>
</tr>
</tbody>
</table>

#### Pharmacy & special instructions

- Sign, date and time to cancel

---

### Medicine (print generic name)

<table>
<thead>
<tr>
<th>Date</th>
<th>Route</th>
<th>Dose</th>
<th>Hourly frequency</th>
<th>Max PRN dose/24 hrs</th>
<th>Indication</th>
<th>Prescriber signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>17/8</td>
<td>IM</td>
<td>5 mg</td>
<td>4/24</td>
<td>30 mg</td>
<td>Pain</td>
<td>J Grace</td>
</tr>
</tbody>
</table>

#### Contact

- #321

---

#### Clinical Dosage Calculations

**CHAPTER 14 Answers**

Clinical Dosage Calculations
### As required (PRN) medicines

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine</th>
<th>Route</th>
<th>Dose</th>
<th>Units</th>
<th>Time</th>
<th>Frequency</th>
<th>Dose calculation</th>
<th>Max dose/24hrs</th>
<th>Prescriber’s signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>17/8/15</td>
<td>Morphine</td>
<td>IM</td>
<td>5 mg</td>
<td>mg</td>
<td>1100</td>
<td>4/24</td>
<td></td>
<td>30 mg</td>
<td>J Grace</td>
</tr>
<tr>
<td>17/8/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17/8/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17/8/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17/8/15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dose range if needed**

**Indication**

**Pharmacy & special instructions**

**Pharm Sign, date and time to cancel**

---

**Date**

**Time**

**Dose**

**Route**

**Giv/Chk**

---

**Date**

**Time**

**Dose**

**Route**

**Giv/Chk**

---

**Date**

**Time**

**Dose**

**Route**

**Giv/Chk**

---

**Date**

**Time**

**Dose**

**Route**

**Giv/Chk**

---

**Date**

**Time**

**Dose**

**Route**

**Giv/Chk**

---

**Continue on discharge?**

**Dispense?**

**Duration:**

---

**Date**

---

**Contact**

**Sign**
## Clinical Dosage Calculations

**As required (PRN) medicines**

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine</th>
<th>Time</th>
<th>Dose</th>
<th>Route</th>
<th>Giv/Chk</th>
<th>Date</th>
<th>Time</th>
<th>Dose</th>
<th>Route</th>
<th>Giv/Chk</th>
<th>Date</th>
<th>Time</th>
<th>Dose</th>
<th>Route</th>
<th>Giv/Chk</th>
</tr>
</thead>
<tbody>
<tr>
<td>17/8</td>
<td>metoclopramide</td>
<td>1130</td>
<td>10 mg</td>
<td>IM</td>
<td>TR/HW</td>
<td>17/8</td>
<td>1130</td>
<td>10 mg</td>
<td>IM</td>
<td>TR/HW</td>
<td>17/8</td>
<td>1130</td>
<td>10 mg</td>
<td>IM</td>
<td>TR/HW</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Warfarin**

- **Brand**: Marevan/Coumadin
- **Target INR Range**: 2–3

<table>
<thead>
<tr>
<th>Date</th>
<th>Warfarin</th>
<th>INR Result</th>
<th>Dose</th>
<th>Prescriber</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/8</td>
<td>15/8</td>
<td>2</td>
<td>mg</td>
<td>JG</td>
<td>1600</td>
</tr>
<tr>
<td>16/8</td>
<td>16/8</td>
<td>3</td>
<td>mg</td>
<td>JG</td>
<td>Initial 1</td>
</tr>
<tr>
<td>17/8</td>
<td>17/8</td>
<td>3</td>
<td>mg</td>
<td>JG</td>
<td>Initial 2</td>
</tr>
<tr>
<td>18/8</td>
<td>18/8</td>
<td>3</td>
<td>mg</td>
<td>JG</td>
<td></td>
</tr>
<tr>
<td>19/8</td>
<td>19/8</td>
<td>3.1</td>
<td>mg</td>
<td>JG</td>
<td></td>
</tr>
</tbody>
</table>

**Dispense?**

- **Yes / No**
- **Duration**

**Contact**

- GRACE
- #321
### Warfarin

<table>
<thead>
<tr>
<th>Date</th>
<th>Route</th>
<th>Prescriber to enter individual doses</th>
<th>Target INR Range</th>
<th>INR Result</th>
<th>Dose</th>
<th>Duration</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/8</td>
<td>PO</td>
<td>Prescriber to enter individual doses</td>
<td>2–3</td>
<td>1.2, 1.3, 1.4, 1.6, 1.8, 2.1</td>
<td>mg, mg, mg, mg, mg, mg, mg, mg, mg</td>
<td>1600</td>
<td>days Qty</td>
</tr>
</tbody>
</table>

**Indication**: Atrial fibrillation  
**Pharmacy**:  
**Prescriber signature**: J Grace  
**Print your name**: GRACE  
**Contact #321**:  

**Prescriber**: JG JG JG JG JG  
**Date and month**:  
**Dispense?**: Yes / No  
**Continue on discharge?**: Yes / No  

### Prednisolone

<table>
<thead>
<tr>
<th>Date</th>
<th>Route</th>
<th>Frequency</th>
<th>Prescriber to enter dose times and individual dose</th>
<th>Indication</th>
<th>Prescriber signature</th>
<th>Print your name</th>
<th>Contact #321</th>
<th>Time to be given</th>
<th>Dispense?</th>
<th>Continue on discharge?</th>
</tr>
</thead>
<tbody>
<tr>
<td>20/8</td>
<td>PO</td>
<td>mane</td>
<td>Prescriber to enter dose times and individual dose</td>
<td>Asthma</td>
<td>J Grace</td>
<td>Grace</td>
<td>#321</td>
<td>0800</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Drug level**:  
**Time level taken**:  
**Dose**: 40, 35, 30 mg  
**Prescriber**: JG JG JG  
**Time to be given**: 0800  
**Dispense?**: Yes  
**Continue on discharge?**: Yes
### Regular medicine

<table>
<thead>
<tr>
<th>Year 20</th>
<th>Date and month</th>
<th>21/8 22/8 23/8</th>
</tr>
</thead>
</table>

**Variable dose medicine**

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine (print generic name)</th>
<th>Drug level</th>
<th>Time level taken</th>
</tr>
</thead>
<tbody>
<tr>
<td>20/8</td>
<td>prednisolone</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PO</th>
<th>Frequency</th>
<th>Indication</th>
<th>Prescriber to enter dose times and individual dose</th>
<th>Prescriber</th>
<th>Time to be given:</th>
<th>Duration:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Asthma</td>
<td></td>
<td>JG</td>
<td>0800</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prescriber signature</th>
<th>Print your name</th>
<th>Contact</th>
<th>Time given</th>
<th>Dispense?</th>
<th>继续 on discharge?</th>
</tr>
</thead>
<tbody>
<tr>
<td>J Grace</td>
<td>Grace</td>
<td>#321</td>
<td>0800 0800 0810</td>
<td>Yes / No</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>

### CHAPTER 4: USING QUALITY AND RISK MANAGEMENT PRINCIPLES IN DOSAGE CALCULATIONS

1. 1 tablet
2. 8.3 mL
3. 0.6 mL

### CHAPTER 5: GENERAL DOSAGE CALCULATIONS

1. 340–595 mg
2. 325 mg
3. 2790 mg
4. $\frac{1}{2}$ tablet
5. 2 tablets
6. $\frac{1}{2}$ tablet
7. 0.5 mg/g or 50 mg in total
8. 50 g of dextrose
9. 0.067 mg/mL
10. 1.2 mL amoxycillin
11. 6 mL gentamicin
12. 6.5 mL amiodarone
CHAPTER 6: INFUSION CALCULATIONS

1. 27.8 or 28 drops per minute
2. 27.8 or 28 drops per minute
3. 25 drops per minute
4. a 500 mL  
   b 83 mL/h
5. a 100 mL  
   b 50 mL/h
6. a 1000 mL  
   b 83 mL/h
7. a 20 mL  
   b 120 mL/h
8. a 10 mL  
   b 20 mL/h
9. a 100 mL  
   b 300 mL/h
10. a 41.67 or 42 mL/h  
    b 790 mL
11. a 125 mL/h  
    b 625 mL
12. a 28 drops per minute  
    b 917 mL
13. 500 mL to be infused over the next 2 hours
14. 400 mL to be infused over the next 4 hours
15. 850 mL to be infused over the next 8.5 hours
16. 875 mL to be infused over the next 4 hours  
    73 drops per minute
17. a 450 mL  
    b The new rate is 50 mL/h  
    c The infusion should end at 1730 hrs (9 hours later)
18. 42 drops per minute
19. a 100 mL  
    b 60 mL/h
20. a 2 mL/h  
    b 48 mL fentanyl/24 h (i.e. 480 mcg of fentanyl/day)

CHAPTER 7: PAEDIATRIC CALCULATIONS

1. a 0.9 mg  
    b 0.45 mL
2. a 60 mg  
    b 0.6 mL
3. a 5.5 mg  
    b 1.1 mL
4. 0.82 m²
5. 0.29 m²
6. 0.57 m²
7. a 8.6 mL of diluent gives 200 mg/mL  
    b 7.5 mL to give 1.5 g IV
8. a 9.8 mL of diluent gives 25 mg/mL  
    b 6 mL to give 150 g IV
9. a 8.8 mL of diluent gives 100 mg/mL  
    b 7.5 mL to give 750 mg IV
10. 0.85 m²
11 2.5 mL salbutamol
   6.9 mL paracetamol
   5.5 mL flucloxacillin

CHAPTER 8: AGED CARE CALCULATIONS

1  \frac{1}{2} \text{ tablet atenolol}

2 42 mL phenytoin
   2 tablets paracetamol
   4 mL frusemide

\frac{1}{2} \text{ tablet digoxin}

\frac{1}{2} \text{ tablet enalapril}

2 tablets diclofenac (check with prescriber as enteric-coated tablets cannot be crushed)

1 mL tramadol

CHAPTER 9: MIDWIFERY CALCULATIONS

1 a 0.7 mL of concentrated fentanyl
   2 mL metoclopramide

b 8 mL of oxytocin goes into the Hartmanns solution. The infusion rate is 252 mL/h

0.5 mL ergometrine

c 0.1 mL Konakion IM

CHAPTER 10: MENTAL HEALTH CALCULATIONS

1 2 tablets of diazepam (PRN)

0.5 mL haloperidol (PRN)

\frac{1}{2} \text{ tablet of chlorpromazine}

2 tablets of lithium

CHAPTER 11: CRITICAL CARE AND HIGH DEPENDENCY DOSAGE CALCULATIONS

1 0.9 mL/h

2 9 mL/h

3 90 mL/h

4 14.6 mL/h

5 24.9 mL/h

6 3.4 mL/h

7 a 4 mL bolus
   b 48 mL/h

8 a 5 mL bolus
   b 30 mL/h

9 a 10 mL bolus
   b 999 mL/h

10 a 0.84 microg/min
   b 1209.5 microg in total for 24 h
   c 20 microg/mL
   d 2.5 mL/h
### For IntraVENOUS Use Only

<table>
<thead>
<tr>
<th>Medicine/s</th>
<th>Amount (units)</th>
<th>Volume (mL)</th>
<th>Conc (units/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>adrenaline</td>
<td>1 mg</td>
<td>50 mL</td>
<td>20 microg/mL</td>
</tr>
</tbody>
</table>

**Diluent:** 5% dextrose  
**Date:** 15/2/2015  
**Time:** 1400  
**Prepared by:** N. Rafferty  
**Checked by:** C. Branch

---

<table>
<thead>
<tr>
<th>Medicine/s</th>
<th>Amount (units)</th>
<th>Volume (mL)</th>
<th>Conc (units/mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>dopamine</td>
<td>600 mg</td>
<td>100 mL</td>
<td>6 mg/mL</td>
</tr>
</tbody>
</table>

**Diluent:** 0.9% sodium chloride  
**Date:** 17/3/2015  
**Time:** 1400  
**Prepared by:** N. Rafferty  
**Checked by:** C. Branch

---

11. a) 164 mcg/min  
   b) 236.16 mg/day  
   c) 1.64 mL/h

---

### CHAPTER 12: ONCOLOGY CALCULATIONS

1. **Mostellar Formula**
   
   \[ m^2 = \frac{2.14}{2} \]
CHAPTER 13: PRACTICE QUESTIONS

BASIC MATHEMATICS

BASIC ARITHMETIC

1. 19
2. 74
3. 492
4. 1113
5. 423
6. 435
7. 87
8. 2238
9. 4824
10. 65
11. 1328
12. 648
13. 12792
14. 218340
15. 712008
16. 11
17. 14
18. 75
19. 63
20. 93

FRACTIONS AND DECIMALS

21. \( \frac{1}{3} \)
22. \( \frac{1}{40} \)
23. \( \frac{1}{3} \)
24. \( 12 \frac{1}{2} \)
25. \( 4 \frac{11}{15} \)
26. \( 5 \frac{2}{5} \)
27. \( 2 \frac{3}{8} \)
28. \( 3 \frac{5}{6} \)
### General Questions

1. 3 mL
2. 8.3 mL
3. 2.5 mL
4. 3.1 mL
5. 6 mL
6. 2.5 mL
7. 2.4 mL
8. 7.5 mL
9. 1.25 mL
10. 8.56 mL – rounded up to 8.6 mL
11. 5.2 mL
12. 2.2 mL
13. 0.8 mL
14. 0.9 mL
15. 15 mL
16. 2 suppositories
17. 1 tablet
18. 0.5 tablets
19. 14.2 mL
20. 4.3 mL
21. 0.6 mL
22. Mane: 3 × 40 mg; midday: 1 × 40 mg and 1 × 20 mg
23. 50 mL
24. a. 2.5 tablets
   b. 7.5 tablets
25. \( \frac{1}{4} \) tablets
26. 13.75 mL
27. 1.2 mL
28. 3 tablets mane, 3 tablets lunch and 2 tablets nocte
29. 0.5 tablets
30. 1.5 tablets
31. 2.75 mL
32. 4 tablets
33. 0.36 mL/dose
34. 25 mL/h
35. 1000 units/h

### Conversion

| a | 0.475 g |
| b | 3.75 L |
| c | 0.245 mg |
| d | 0.75 g |
| e | 35 000 mg |
| f | 750 000 microg |
Clinical Dosage Calculations

**CHAPTER 14**

**Answers**

47. a) 78%
   b) 92%

48. a) 75%
   b) 20%

49. a) \(\frac{4}{25}\)
   b) \(\frac{7}{25}\)

50. 1600 microg/mL

51. 0.5 units/mL

52. a) 55.5 or 56 drops per minute
   b) 166.67 mL per hour or 167 mL per hour (rounded up)

53. a) 41.66 or 42 drops per minute
   b) 125 mL/h

54. 150 mL/h

55. 80 mL/h

56. 125 mL/h

57. 125 mL/h

58. a) 8 h
   b) 15 mins remaining

59. a) 8.8 mL
   b) 9.3 mL

60. a) 1.5 m²
   b) 1.3 m²

61. a) 42 mL/h
   b) 5 mL/h

62

<table>
<thead>
<tr>
<th>Body Surface Area (BSA) in m²</th>
<th>Required dose of paclitaxel in mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mosteller formula</td>
<td>1.967 m²</td>
</tr>
<tr>
<td>DuBois formula</td>
<td>1.936 m²</td>
</tr>
<tr>
<td>Gehan and George formula</td>
<td>1.987 m²</td>
</tr>
<tr>
<td>Haycock formula</td>
<td>1.988 m²</td>
</tr>
</tbody>
</table>

63. a) 2 mL
   b) 1000 mL

64. 3 mL

65. 7.5 mL
### MEDICATION CHART QUESTIONS

#### 1. Telephone orders (to be signed within 24 hours of order)

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine (print generic name)</th>
<th>Route</th>
<th>Dose</th>
<th>Frequency</th>
<th>Check initials</th>
<th>Prescriber name</th>
<th>Pres. sign</th>
<th>Date</th>
<th>Record of administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>21/10 1815</td>
<td>METOCLOPRAMIDE</td>
<td>IM</td>
<td>10 mg</td>
<td>STAT</td>
<td>KR</td>
<td>VB</td>
<td>DISH</td>
<td></td>
<td>1820</td>
</tr>
</tbody>
</table>

#### 2. Verbal Orders (must be signed as soon as possible or within 24 hours of order)

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine (print generic name)</th>
<th>Route</th>
<th>Dose</th>
<th>Units</th>
<th>Dose calculation</th>
<th>Date &amp; time of dose</th>
<th>Initials: Prescriber</th>
<th>Initials: Witness</th>
<th>Pharmacy &amp; Special Instructions</th>
<th>Checked by</th>
</tr>
</thead>
<tbody>
<tr>
<td>21/10 1815</td>
<td>METOCLOPRAMIDE</td>
<td>IM</td>
<td>10 mg</td>
<td>mg/kg</td>
<td>mg/kg per dose</td>
<td>21/10 1820</td>
<td>KR</td>
<td>VB</td>
<td>DISH</td>
<td>VB</td>
</tr>
</tbody>
</table>

#### 2. Telephone orders (to be signed within 24 hours of order)

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine (print generic name)</th>
<th>Route</th>
<th>Dose</th>
<th>Frequency</th>
<th>Check initials</th>
<th>Prescriber name</th>
<th>Pres. sign</th>
<th>Date</th>
<th>Record of administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/6 0945</td>
<td>CEPHALAXIN</td>
<td>PO</td>
<td>500 mg</td>
<td>TDS</td>
<td>KR</td>
<td>VB</td>
<td>SMITH</td>
<td></td>
<td>0950</td>
</tr>
</tbody>
</table>

**Clinical Dosage Calculations**

**Answers**
**Verbal Orders** (must be signed as soon as possible or within 24 hours of order)

<table>
<thead>
<tr>
<th>Date and Time</th>
<th>Medicine</th>
<th>Route</th>
<th>Dose</th>
<th>Date &amp; time of dose</th>
<th>Initials: Nurse</th>
<th>Time commenced</th>
<th>Initials: Witness</th>
<th>Time completed</th>
</tr>
</thead>
<tbody>
<tr>
<td>15/6 0945</td>
<td>CEPHALEXIN</td>
<td>PO</td>
<td>500 mg</td>
<td>15/6 0950</td>
<td>KR</td>
<td>0950</td>
<td>VB</td>
<td></td>
</tr>
</tbody>
</table>

Dose range if needed

**Prescriber’s name**: SMITH  
**Prescriber’s signature**:  
**Pharmacy & Special Instructions**:  
**Pharm**:  
**Checked by**:  

---

**Once only and nurse initiated medicines and pre-medications**

<table>
<thead>
<tr>
<th>Date prescribed</th>
<th>Medicine (print generic name)</th>
<th>Route</th>
<th>Dose</th>
<th>Date/time of dose</th>
<th>Prescriber/Nurse Initiator (NI)</th>
<th>Given by</th>
<th>Time given</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/8/15</td>
<td>PARACETAMOL</td>
<td>PO</td>
<td>1 g</td>
<td>24/8/15 1800</td>
<td>RAFFERTY</td>
<td>KR</td>
<td>1810</td>
</tr>
</tbody>
</table>

**Given by**:  
**Pharmacy**:  
**Checked by**:  

---

**Once Only**

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine</th>
<th>Route</th>
<th>Dose</th>
<th>Date &amp; time of dose</th>
<th>Pharmacy &amp; special instructions</th>
<th>Given by</th>
<th>Time commenced</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/8 1800</td>
<td>PARACETAMOL</td>
<td>PO</td>
<td>1 g</td>
<td>24/8 1810</td>
<td></td>
<td>KR</td>
<td>1810</td>
</tr>
</tbody>
</table>

**Given by**:  
**Pharmacy & special instructions**:  
**Checked by**:  

---

**Clinical Dosage Calculations**

**CHAPTER 14**: Answers

---

**Clinical Dosage Calculations**:
### Once only and nurse initiated medicines and pre-medications

<table>
<thead>
<tr>
<th>Date prescribed</th>
<th>Medicine (print generic name)</th>
<th>Route</th>
<th>Dose</th>
<th>Date/time of dose</th>
<th>Prescriber/Nurse Initiator (NI)</th>
<th>Given by</th>
<th>Time given</th>
<th>Pharmacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/7/15</td>
<td>CEPACOL LOZENGE</td>
<td>TOP</td>
<td>1</td>
<td>1/7/15 2100</td>
<td>J Bardi</td>
<td>JB</td>
<td>2110</td>
<td></td>
</tr>
</tbody>
</table>

### Once Only

<table>
<thead>
<tr>
<th>Date</th>
<th>Medicine</th>
<th>Dose</th>
<th>Units</th>
<th>Route</th>
<th>Dose calculation (eg. mg/kg per dose)</th>
<th>Prescriber’s signature</th>
<th>Time commenced</th>
<th>Given by</th>
<th>Checked by</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/7</td>
<td>CEPACOL LOZENGE</td>
<td>1 tab</td>
<td></td>
<td>TOP</td>
<td></td>
<td>J Bardi</td>
<td>2110</td>
<td>JB</td>
<td></td>
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</tbody>
</table>