## Sheet 1

1. What volume is required for an injection if 500mg are ordered and stock ampules contain 250mg/ml?
2. What volume is required for an injection if 600mg are ordered and stock ampules contain 350mg/ml?
3. What volume is required for an injection if 750mg are ordered and stock ampules contain 200mg/ml?
4. A dose of 2g of medication has been ordered for a patient. The medication comes in 4g/0.4mL. What volume will you give the patient?
5. A dose of 4,500mg of medication has been ordered for a patient. The medication comes in 5g/0.3mL. What volume will you give the patient?
6. A dose of 3,500mg of medication has been ordered for a patient. The medication comes in 5g/2mL. What volume will you give the patient?
7. A flask of 1.5L of 0.9% saline is required over 8hrs with a DF of 20. How many DPM is this?
8. A flask of 1L of 4% dextrose in saline is required over 6hrs with a DF of 15. How many DPM is this?
9. A flask of 850mL of 0.9% saline is required over 12hrs with a DF of 60. How many DPM is this?
10. A child weighs 13.5kg and is prescribed a medication for 0.8mg/kg/dose. The stock strength is 10mg/2mL. What volume will you give the patient?
11. A patient weighs 45kg and is prescribed a medication for 3mg/kg/dose. The stock strength is 2mg/0.5mL. What volume will you give the patient?
12. A patient weighs 16.5kg and is prescribed a medication for 0.4mg/kg/dose. The stock strength is 20mg/5mL. What volume will you give the patient?
13. A 13kg child is ordered a medication for 2.5mg/kg/day with 3 doses per day. How many mg would you administer per dose?
14. A 3.4kg child is ordered a medication for 5mg/kg/day with 4 doses per day. How many mg would you administer per dose?
15. A 3,800g infant is ordered a medication for 0.6mg/kg/day over 6 doses per day. How much will you give the patient per day?
16. A patient needs 15mg of a medication. *The Australian Injectables Drug Handbook* states that each milligram of this medication is to be mixed with 10mL of water over 3-5 minutes via IV bolus. After preparing the medication, how many mL per minute would you administer if you do it over 3 minutes?
17. A patient needs 200mg of a medication. *The Australian Injectables Drug Handbook* states that each gram of this medication is to be mixed with 1L of water over 3-5 minutes via IV bolus. After preparing the medication, how many mL per minute would you administer if you do it over 3 minutes?
18. A patient needs 40mg of a medication. *The Australian Injectables Drug Handbook* states that each gram of this medication is to be mixed with 10mL of water over 3-5 minutes via IV bolus. After preparing the medication, how many mL per minute would you administer if you do it over 5 minutes?

1. A child weighs 15kg and is prescribed a medication with a dose of 2mg/kg/day in equal doses every 4 hours. How many mg will you give per dose?
2. A patient weighs 3kg and is prescribed a medication with a dose of 0.1mg/kg/day in equal doses every 8 hours. How many mg will you give per dose?
3. A patient weighs 6.5kg and is prescribed a medication with a dose of 0.5mg/kg/day in equal doses every 12 hours. How many mg will you give per dose?
4. How many mg per mL will be infused for a solution of 350mg of a medication in 100mL of saline? (Round to one decimal place.)
5. How many mg per mL will be infused for a solution of 400mg of a medication in 300mL of saline? (Round to one decimal place.)
6. How many mg per mL will be infused for a solution of 550mg of a medication in 200mL of saline?

## Answers – Sheet 1

1. What volume is required for an injection if 500mg are ordered and stock ampules contain 250mg/ml? 2mL
2. What volume is required for an injection if 600mg are ordered and stock ampules contain 350mg/ml? 1.71428 🡪 1.7mL
3. What volume is required for an injection if 750mg are ordered and stock ampules contain 200mg/ml? 3.8mL
4. A dose of 2g of medication has been ordered for a patient. The medication comes in 4g/0.4mL. What volume will you give the patient? 0.2mL
5. A dose of 4,500mg of medication has been ordered for a patient. The medication comes in 5g/0.3mL. What volume will you give the patient? 0.27 🡪 0.3mL
6. A dose of 3,500mg of medication has been ordered for a patient. The medication comes in 5g/2mL. What volume will you give the patient? 1.4mL
7. A flask of 1.5L of 0.9% saline is required over 8hrs with a DF of 20. How many DPM is this? 62.4999 🡪 62dpm
8. A flask of 1L of 4% dextrose in saline is required over 6hrs with a DF of 15. How many DPM is this? 41.6666 🡪 42dpm
9. A flask of 850mL of 0.9% saline is required over 12hrs with a DF of 60. How many DPM is this? 70.83333 🡪 71dpm
10. A child weighs 13.5kg and is prescribed a medication for 0.8mg/kg/dose. The stock strength is 10mg/2mL. What volume will you give the patient? 2.16mL
11. A patient weighs 45kg and is prescribed a medication for 3mg/kg/dose. The stock strength is 2mg/0.5mL. What volume will you give the patient? 33.75mL
12. A patient weighs 16.5kg and is prescribed a medication for 0.4mg/kg/dose. The stock strength is 20mg/5mL. What volume will you give the patient? 1.65mL
13. A 13kg child is ordered a medication for 2.5mg/kg/day with 3 doses per day. How many mg would you administer per dose? 10.83mg
14. A 3.4kg child is ordered a medication for 5mg/kg/day with 4 doses per day. How many mg would you administer per dose? 4.25mg
15. A 3,800g infant is ordered a medication for 0.6mg/kg/day over 6 doses per day. How much will you give the patient per day? 2.28mg
16. A patient needs 15mg of a medication. *The Australian Injectables Drug Handbook* states that each milligram of this medication is to be mixed with 10mL of water over 3-5 minutes via IV bolus. After preparing the medication, how many mL per minute would you administer if you do it over 3 minutes?0.05 🡪 50mL/min.
17. A patient needs 200mg of a medication. *The Australian Injectables Drug Handbook* states that each gram of this medication is to be mixed with 1L of water over 3-5 minutes via IV. After preparing the medication, how many mL per minute would you administer if you do it over 3 minutes? 0.08L 🡪 80mL/min.
18. A patient needs 4mg of a medication. *The Australian Injectables Drug Handbook* states that each gram of this medication is to be mixed with 10mL of water over 3-5 minutes via IV bolus. After preparing the medication, how many mL per minute would you administer if you do it over 5 minutes?8mL/min.
19. A child weighs 15kg and is prescribed a medication with a dose of 2mg/kg/day in equal doses every 4 hours. How many mg will you give per dose? 5mg/dose
20. A patient weighs 3kg and is prescribed a medication with a dose of 0.1mg/kg/day in equal doses every 8 hours. How many mg will you give per dose? 0.1mg/dose
21. A patient weighs 6.5kg and is prescribed a medication with a dose of 0.5mg/kg/day in equal doses every 12 hours. How many mg will you give per dose? 1.625 🡪 1.6mg/dose
22. How many mg per mL will be infused for a solution of 350mg of a medication in 100mL of saline? (Round to one decimal place.) 3.5mg/mL
23. How many mg per mL will be infused for a solution of 400mg of a medication in 300mL of saline? (Round to one decimal place.) 1.333 🡪 1.3mg/mL
24. How many mg per mL will be infused for a solution of 550mg of a medication in 200mL of saline? 2.75 🡪 2.8mg/mL

# Sheet 2

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| 1 | A patient needs 2g of a medication. It comes in 250mg doses. How many doses need to be administered? How many hours will it take if the patient can have one dose every 6 hours? |
| 2 | An IV drip is set to a flow rate of 55mL/hour. The doctor changes the flow rate to 47,500µL/hour. How much less is the patient now getting per hour? How much will the patient now get in the next 12 hours? |
| 3 | How much dextrose is in 4L of 20% solution? |
| 4 | Tablets come in 50mg and 100mg strengths. A patient is prescribed 375mg, how many tablets will you give them? |
| 5 | A patient needs 0.075g of a medicine that comes in 30mg tablets. How many tablets will the patient take? |
| 6 | A patient needs 3g of a medication that comes in 15mg/mL. How much of the solution will be given? |
| 7 | A patient needs 2.5g of a medication that comes in 20mg/5mL. How much of the solution will be given? |
| 8 | An IV drip is set to 1,500mL over 6 hours, how many millilitres per minute will the patient received? |
| 9 | The total volume to be administered from an IV drip is 1,250mL over 10 hours. How many millilitres per minute will be given? |
| 10 | An IV drip has a drop factor of 60. The volume to be administered is 180mL over 5 hours. How many drops per minute will it be? |
| 11 | The volume of an IV drip to be administered is 0.25L over 8 hours. The drop factor is 60. How many drops per minute will it be? |
| 12 | A child is prescribed 4.5mg/kg of a medication. He weighs 56kg. How much of the medication will you administer? |
| 13 | A child weighs 14.4kg is prescribed 300µg/kg of a medication. How much of the medication should be given? |

# ANSWERS – Sheet 2

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| 1 | A patient needs 2g of a medication. It comes in 250mg doses. How many doses need to be administered? How many hours will it take if the patient can have one dose every 6 hours? | 8 doses, 48 hours |
| 2 | An IV drip is set to a flow rate of 55mL/hour. The doctor changes the flow rate to 47,500µL/hour. How much less is the patient now getting per hour? How much will the patient now get in the next 12 hours? | 7,500µL less, 570mL in next 12 hours |
| 3 | How much dextrose is in 4L of 20% solution? | 800mL |
| 4 | Tablets come in 50mg and 100mg strengths. A patient is prescribed 375mg, how many tablets will you give them? | 3 x 100mg tablets and 1.5 x 50mg tablets  OR  7.5 x 50mg tablets |
| 5 | A patient needs 0.075g of a medicine that comes in 30mg tablets. How many tablets will the patient take? | 2.5 tablets |
| 6 | A patient needs 3g of a medication that comes in 15mg/mL. How much of the solution will be given? | 200mL |
| 7 | A patient needs 2.5g of a medication that comes in 20mg/5mL. How much of the solution will be given? | 625mL |
| 8 | An IV drip is set to 1,500mL over 6 hours, how many millilitres per minute will the patient received? | 4.17mL/min.  🡪 4.2mL/min. |
| 9 | The total volume to be administered from an IV drip is 1,250mL over 10 hours. How many millilitres per minute will be given? | 2.08mL/min.  🡪 2mL/min. |
| 10 | An IV drip has a drop factor of 60. The volume to be administered is 180mL over 5 hours. How many drops per minute will it be? | 36dpm |
| 11 | The volume of an IV drip to be administered is 0.25L over 8 hours. The drop factor is 60. How many drops per minute will it be? | 31dpm |
| 12 | A child is prescribed 4.5mg/kg of a medication. He weighs 56kg. How much of the medication will you administer? | 252mg |
| 13 | A child weighs 14.4kg is prescribed 300µg/kg of a medication. How much of the medication should be given? | 4.32mg or 4,230µg |

# Sheet 3

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| 1 | The total volume ordered is 225mL N/Saline 0.9% IV. The time over which it is to be given is 40 minutes. The drop factor is 15. How many drops per minute will be delivered? |
| 2 | The total volume ordered is 550mL N/Saline 0.9% IV. The time over which it is to be given is 4 hours. The drop factor is 20. How many drops per minute will be delivered? |
| 3 | The total volume ordered is 1200mL N/Saline 0.9% IV. The time over which it is to be given is 2 hours. How many mL per hour would be delivered? |
| 4 | The total volume ordered is 1.5L N/Saline 0.9% IV. The time over which it is to be given is 3 hours. How many mL per hour would be delivered? |
| 5 | The dose to be given of a medication is 1.2g. The stock strength is 2g/10mL. Calculate the mL needed to deliver the medication. |
| 6 | The dose to be given of a medication is 5mg. The stock strength is 1mg/4mL. Calculate the mL needed to deliver the medication. |
| 7 | Your patient is receiving 350MICROg of a medication in 750mL of CSL. How many MICROg per mL is the patient receiving? |
| 8 | Your patient is receiving 875g of a medication in 1L of CSL. How many g per mL is the patient receiving? |
| 9 | 2L N/Saline 0.9% has been running for 45 minutes at a 6 hourly rate. How many mL have been administered already? |
| 10 | 1,200mL N/Saline 0.9% has been running for 20 minutes at a 2 hourly rate. How many mL have been administered already? |
| 11 | 1,300mL N/Saline 0.9% is running at a 6 hourly rate, which commenced at 1500hrs. At 1630hrs the doctor requests for the remaining volume to be run over 3 hours. Calculate the mL per hour for the remaining volume. |
| 12 | 1.5L N/Saline 0.9% is running at a 12 hourly rate, which commenced at 0800hrs. At 1200hrs the doctor requests for the remaining volume to be run over 4 hours. Calculate the mL per hour for the remaining volume. |
| 13 | A child who weighs 14kg is ordered 55MICROg/kg IV, 2 hours before surgery. The solution strength is 2mg/mL. How many mL do you administer? |
| 14 | A child who weighs 5kg is ordered 0.5g/kg IV, 4 hours before surgery. The solution strength is 2mg/mL. How many mL per hour do you administer? |

# Answers – Sheet 3

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| 1 | The total volume ordered is 225mL N/Saline 0.9% IV. The time over which it is to be given is 40 minutes. The drop factor is 15. How many drops per minute will be delivered? | 84dpm |
| 2 | The total volume ordered is 550mL N/Saline 0.9% IV. The time over which it is to be given is 4 hours. The drop factor is 20. How many drops per minute will be delivered? | 46dpm |
| 3 | The total volume ordered is 1200mL N/Saline 0.9% IV. The time over which it is to be given is 2 hours. How many mL per hour would be delivered? | 600mL/hr |
| 4 | The total volume ordered is 1.5L N/Saline 0.9% IV. The time over which it is to be given is 3 hours. How many mL per hour would be delivered? | 500mL/hr |
| 5 | The dose to be given of a medication is 1.2g. The stock strength is 2g/10mL. Calculate the mL needed to deliver the medication. | 6mL |
| 6 | The dose to be given of a medication is 5mg. The stock strength is 1mg/4mL. Calculate the mL needed to deliver the medication. | 20mL |
| 7 | Your patient is receiving 350MICROg of a medication in 750mL of CSL. How many MICROg per mL is the patient receiving? | 0.5MICROg/mL |
| 8 | Your patient is receiving 875g of a medication in 1L of CSL. How many g per mL is the patient receiving? | 0.9g.mL |
| 9 | 2L N/Saline 0.9% has been running for 45 minutes at a 6 hourly rate. How many mL have been administered already? | 250mL |
| 10 | 1200mL N/Saline 0.9% has been running for 20 minutes at a 2 hourly rate. How many mL have been administered already? | 200mL |
| 11 | 1300mL N/Saline 0.9% is running at a 6 hourly rate, which commenced at 1500hrs. At 1630hrs the doctor requests for the remaining volume to be run over 3 hours. Calculate the mL per hour for the remaining volume. | 325mL/hr |
| 12 | 1.5L N/Saline 0.9% is running at a 12 hourly rate, which commenced at 0800hrs. At 1200hrs the doctor requests for the remaining volume to be run over 4 hours. Calculate the mL per hour for the remaining volume. | 250mL/hr |
| 13 | A child who weighs 14kg is ordered 55MICROg/kg IV, 2 hours before surgery. The solution strength is 2mg/mL. How many mL do you administer? | 0.4mL |
| 14 | A child who weighs 5kg is ordered 0.5g/kg IV, 4 hours before surgery. The solution strength is 2mg/mL. How many mL do you administer? | 312.5mL/hr |