Dosage calculation worksheet: IV Flow Rate

Name: _____ Date: _____

Round each answer as the problem says. For study and exam practice, not for patient care.

1. Per the weight-based heparin protocol, give a bolus of 80 units/kg, then start an infusion at 18 units/kg/hr. The client weighs 85 kg. Available: heparin 12,500 units in 250 mL. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

2. The nurse is caring for a client who weighs 47 kg and is following the weight-based heparin protocol. The protocol calls for a bolus of 80 units/kg, then an infusion at 18 units/kg/hr. The nurse has heparin 12,500 units in 250 mL available. How many units should the nurse give as the bolus? Record your answer using a whole number.

Answer: _____

3. Per the weight-based heparin protocol, give a bolus of 80 units/kg, then start an infusion at 18 units/kg/hr. The client weighs 103 kg. Available: heparin 12,500 units in 250 mL. How many units should the nurse give as the bolus? Record your answer using a whole number.

Answer: _____

4. The nurse is caring for a client who weighs 58 kg and is on a weight-based heparin protocol. The prescription is for a bolus of 80 units/kg, followed by an infusion at 18 units/kg/hr. The nurse has heparin 25,000 units in 250 mL available. How many units should the nurse give as the bolus? Record your answer using a whole number.

Answer: _____

5. The nurse is caring for a client who weighs 86 kg and has a prescription for a weight-based heparin protocol: a bolus of 80 units/kg, then an infusion at 18 units/kg/hr. The nurse has heparin 12,500 units in 250 mL available. How many units should the nurse give as the bolus? Record your answer using a whole number.

Answer: _____

6. A client receiving treatment for a clot is being managed with a weight-based heparin protocol. Per the weight-based heparin protocol, give a bolus of 80 units/kg, then start an infusion at 18 units/kg/hr. The client weighs 101 kg. Available: heparin 25,000 units in 250 mL. How many units should the nurse give as the bolus? Record your answer using a whole number.

Answer: _____

7. The nurse is caring for a client who weighs 89 kg and has a prescription for a weight-based heparin protocol. The protocol calls for a bolus of 80 units/kg, then an infusion at 18 units/kg/hr. The nurse has heparin 12,500 units in 250 mL available. How many units should the nurse give as the bolus? Record your answer using a whole number.

Answer: _____

8. The nurse is caring for a client who has a weight-based heparin protocol. The prescription is a bolus of 80 units/kg, then an infusion at 18 units/kg/hr. The client weighs 71 kg. The nurse has heparin 12,500 units in 250 mL available. How many units should the nurse give as the bolus? Record your answer using a whole number.

Answer: _____

9. Per the weight-based heparin protocol, give a bolus of 80 units/kg, then start an infusion at 18 units/kg/hr. The client weighs 98 kg. Available: heparin 12,500 units in 250 mL. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

10. Per the weight-based heparin protocol, give a bolus of 80 units/kg, then start an infusion at 18 units/kg/hr. The client weighs 60 kg. Available: heparin 12,500 units in 250 mL. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

11. Order: dobutamine 15 mcg/kg/min IV. Available: dobutamine 1 g in 250 mL. The client weighs 95 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

12. The client in the cardiac care unit has decreased cardiac output and needs a continuous inotropic infusion. Order: dobutamine 0.75 mcg/kg/min IV. Available: dobutamine 1 g in 250 mL. The client weighs 83 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

13. The client in the cardiac care unit has decreased cardiac output and needs inotropic support. The prescription reads dobutamine 5 mcg/kg/min IV. The pharmacy supplies dobutamine 250 mg in 250 mL. The client weighs 62 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

14. Order: dobutamine 5 mcg/kg/min IV. Available: dobutamine 500 mg in 250 mL. The client weighs 117 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

15. The nurse is caring for a client in the intensive care unit who has decompensated heart failure and needs inotropic support. Prescription: dobutamine 15 mcg/kg/min IV. Available: dobutamine 250 mg in 250 mL. The client weighs 123 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using a whole number.

Answer: _____

16. Order: dobutamine 2.5 mcg/kg/min IV. Available: dobutamine 1 g in 250 mL. The client weighs 139 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

17. The nurse is caring for a client who has a prescription for dopamine 5 mcg/kg/min IV. The nurse has dopamine 400 mg in 250 mL available. The client weighs 46 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

18. Order: dobutamine 7.5 mcg/kg/min IV. Available: dobutamine 250 mg in 250 mL. The client weighs 92 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

19. The nurse is caring for a client who has a prescription for dopamine 2 mcg/kg/min IV. The nurse has dopamine 800 mg in 250 mL available. The client weighs 64 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

20. Order: dobutamine 3 mcg/kg/min IV. Available: dobutamine 500 mg in 250 mL. The client weighs 119 kg. At how many mL/hr should the nurse set the infusion pump? Record your answer using 1 decimal place.

Answer: _____

More practice: https://doserightrn.com/worksheets/ and the DoseRightRN app.

Answer key

1. 30.6 mL/hr

Concentration = 12,500 units ÷ 250 mL = 50 units/mL.
Dose = 18 units/kg/hr × 85 kg = 1,530 units/hr.
mL/hr = 1,530 units/hr ÷ 50 units/mL = 30.6 mL/hr.
30.6 mL/hr is exact, so no rounding is needed.

2. 3,760 units

Bolus = 80 units/kg × 47 kg = 3,760 units.
3,760 units is exact, so no rounding is needed.

3. 8,240 units

Bolus = 80 units/kg × 103 kg = 8,240 units.
8,240 units is exact, so no rounding is needed.

4. 4,640 units

Bolus = 80 units/kg × 58 kg = 4,640 units.
4,640 units is exact, so no rounding is needed.

5. 6,880 units

Bolus = 80 units/kg × 86 kg = 6,880 units.
6,880 units is exact, so no rounding is needed.

6. 8,080 units

Bolus = 80 units/kg × 101 kg = 8,080 units.
8,080 units is exact, so no rounding is needed.

7. 7,120 units

Bolus = 80 units/kg × 89 kg = 7,120 units.
7,120 units is exact, so no rounding is needed.

8. 5,680 units

Bolus = 80 units/kg × 71 kg = 5,680 units.
5,680 units is exact, so no rounding is needed.

9. 35.3 mL/hr

Concentration = 12,500 units ÷ 250 mL = 50 units/mL.
Dose = 18 units/kg/hr × 98 kg = 1,764 units/hr.
mL/hr = 1,764 units/hr ÷ 50 units/mL = 35.28 mL/hr.
Below 100 mL/hr the pump is set to the nearest tenth: 35.3 mL/hr.

10. 21.6 mL/hr

Concentration = 12,500 units ÷ 250 mL = 50 units/mL.
Dose = 18 units/kg/hr × 60 kg = 1,080 units/hr.
mL/hr = 1,080 units/hr ÷ 50 units/mL = 21.6 mL/hr.
21.6 mL/hr is exact, so no rounding is needed.

11. 21.4 mL/hr

Concentration = 1,000,000 mcg ÷ 250 mL = 4,000 mcg/mL.
Dose per hour = 15 mcg/kg/min × 95 kg × 60 min/hr = 85,500 mcg/hr.
mL/hr = 85,500 mcg/hr ÷ 4,000 mcg/mL = 21.38 mL/hr.
Below 100 mL/hr the pump is set to the nearest tenth: 21.4 mL/hr.

12. 0.9 mL/hr

Concentration = 1,000,000 mcg ÷ 250 mL = 4,000 mcg/mL.
Dose per hour = 0.75 mcg/kg/min × 83 kg × 60 min/hr = 3,735 mcg/hr.
mL/hr = 3,735 mcg/hr ÷ 4,000 mcg/mL = 0.93 mL/hr.
Below 100 mL/hr the pump is set to the nearest tenth: 0.9 mL/hr.

13. 18.6 mL/hr

Concentration = 250,000 mcg ÷ 250 mL = 1,000 mcg/mL.
Dose per hour = 5 mcg/kg/min × 62 kg × 60 min/hr = 18,600 mcg/hr.
mL/hr = 18,600 mcg/hr ÷ 1,000 mcg/mL = 18.6 mL/hr.
18.6 mL/hr is exact, so no rounding is needed.

14. 17.6 mL/hr

Concentration = 500,000 mcg ÷ 250 mL = 2,000 mcg/mL.
Dose per hour = 5 mcg/kg/min × 117 kg × 60 min/hr = 35,100 mcg/hr.
mL/hr = 35,100 mcg/hr ÷ 2,000 mcg/mL = 17.55 mL/hr.
Below 100 mL/hr the pump is set to the nearest tenth: 17.6 mL/hr.

15. 111 mL/hr

Concentration = 250,000 mcg ÷ 250 mL = 1,000 mcg/mL.
Dose per hour = 15 mcg/kg/min × 123 kg × 60 min/hr = 110,700 mcg/hr.
mL/hr = 110,700 mcg/hr ÷ 1,000 mcg/mL = 110.7 mL/hr.
At 100 mL/hr or more the pump is set to a whole number: 111 mL/hr.

16. 5.2 mL/hr

Concentration = 1,000,000 mcg ÷ 250 mL = 4,000 mcg/mL.
Dose per hour = 2.5 mcg/kg/min × 139 kg × 60 min/hr = 20,850 mcg/hr.
mL/hr = 20,850 mcg/hr ÷ 4,000 mcg/mL = 5.21 mL/hr.
Below 100 mL/hr the pump is set to the nearest tenth: 5.2 mL/hr.

17. 8.6 mL/hr

Concentration = 400,000 mcg ÷ 250 mL = 1,600 mcg/mL.
Dose per hour = 5 mcg/kg/min × 46 kg × 60 min/hr = 13,800 mcg/hr.
mL/hr = 13,800 mcg/hr ÷ 1,600 mcg/mL = 8.63 mL/hr.
Below 100 mL/hr the pump is set to the nearest tenth: 8.6 mL/hr.

18. 41.4 mL/hr

Concentration = 250,000 mcg ÷ 250 mL = 1,000 mcg/mL.
Dose per hour = 7.5 mcg/kg/min × 92 kg × 60 min/hr = 41,400 mcg/hr.
mL/hr = 41,400 mcg/hr ÷ 1,000 mcg/mL = 41.4 mL/hr.
41.4 mL/hr is exact, so no rounding is needed.

19. 2.4 mL/hr

Concentration = 800,000 mcg ÷ 250 mL = 3,200 mcg/mL.
Dose per hour = 2 mcg/kg/min × 64 kg × 60 min/hr = 7,680 mcg/hr.
mL/hr = 7,680 mcg/hr ÷ 3,200 mcg/mL = 2.4 mL/hr.
2.4 mL/hr is exact, so no rounding is needed.

20. 10.7 mL/hr

Concentration = 500,000 mcg ÷ 250 mL = 2,000 mcg/mL.
Dose per hour = 3 mcg/kg/min × 119 kg × 60 min/hr = 21,420 mcg/hr.
mL/hr = 21,420 mcg/hr ÷ 2,000 mcg/mL = 10.71 mL/hr.
Below 100 mL/hr the pump is set to the nearest tenth: 10.7 mL/hr.