MATHSFORNURSES

Working Out a Basic Dose – Worked Solutions

Question 1

A patient is prescribed 400mg of a drug with a stock dose of 100mg/10ml. How much of the solution should the patient be given?

To work out the volume that you would give, divide the prescribed dose by the stock dose and multiply your answer by the volume that the stock dose is in.

The prescribed dose is 400mg. The stock dose is 100mg and it is in a volume of 10ml.

First, work out 400 ÷ 100. This is another way of asking how many 100s make 400, so this would be 4.

Then work out 4 × 10ml, which will be 40ml.

Answer: 40ml

Question 2

A patient is prescribed 750mg of a drug that is available with a stock dose of 25mg/20ml. How much of the solution should the patient be given?

To work out the volume that you would give, divide the prescribed dose by the stock dose and multiply your answer by the volume that the stock dose is in.

The prescribed dose is 750mg. The stock dose is 25mg and it is in a volume of 20ml.

First, work out 750 ÷ 25. You could do this using the fractions method, so write that fraction $^{750}/_{25}$ and simplify it by dividing both numbers by 5 to get $^{150}/_{5}$ and then divide both numbers by 5 again to get $^{30}/_{1}$.

Then work out 30 × 20ml, which will be 600ml (because 3 × 2 = 6 and there are two zeroes to add).

Answer: 600ml

Question 3

A patient is prescribed 40mg of a drug with a stock dose of 1mg/5ml. How much of the solution should the patient be given?

To work out the volume that you would give, divide the prescribed dose by the stock dose and multiply your answer by the volume that the stock dose is in.

The prescribed dose is 40mg. The stock dose is 1mg and it is in a volume of 5ml.

First, work out 40 ÷ 1. Dividing by 1 leaves a number unchanged, so this will be 40.

Then work out 40 × 5ml, which will be 200ml.

Answer: 200ml

Question 4

A patient is prescribed 225mg of a drug that is available with a stock dose of 10mg/5ml. How much of the solution should the patient be given?

To work out the volume that you would give, divide the prescribed dose by the stock dose and multiply your answer by the volume that the stock dose is in.

The prescribed dose is 225mg. The stock dose is 10mg and it is in a volume of 5ml.

First, work out 225 ÷ 10. Dividing by 10 moves each digit one place to the right, so this would be 22.5.

Then work out 22.5 × 5ml, which you can do using the grid method, breaking the 22.5 into '20', '2' and '0.5'. In your grid, you should have 20 × 5 = 100, 2 × 5 = 10 and 0.5 × 5 = 2.5.

Add these values together to get your final answer. 100 + 10 + 2.5 = 112.5ml

Answer: 112.5ml

Question 5

A patient is prescribed 80mg of a drug that is available with a stock dose of 50mg/20ml. How much of the solution should the patient be given?

To work out the volume that you would give, divide the prescribed dose by the stock dose and multiply your answer by the volume that the stock dose is in.

The prescribed dose is 80mg. The stock dose is 50mg and it is in a volume of 20ml.

First, work out 80 ÷ 50. You could set this up as the fraction $^{80}/_{50}$ and simplify this by dividing both numbers by 5 to get $^{16}/_{10}$ (don't simplify it any further because the 10 on the bottom is easier to divide by than a 5 would be).

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Now you need to work out 16 ÷ 10, which you can do by moving each digit one place to the right, which will be 1.6

Then work out 1.6 × 20ml. To do this break up the 20 into 10 × 2, so you will have 1.6 × 10 × 2. Multiplying by 10 moves each digit one place to the left to leave 16 × 2, which is 32ml.

Answer: 32ml