

# MATH SOLUTIONS FOR NURSES



Dear nurses,

Math Solutions is intended to help nurses who are new and experiencing difficulty with math problems, in the Clinical Setting. This will be ongoing.

Margaret

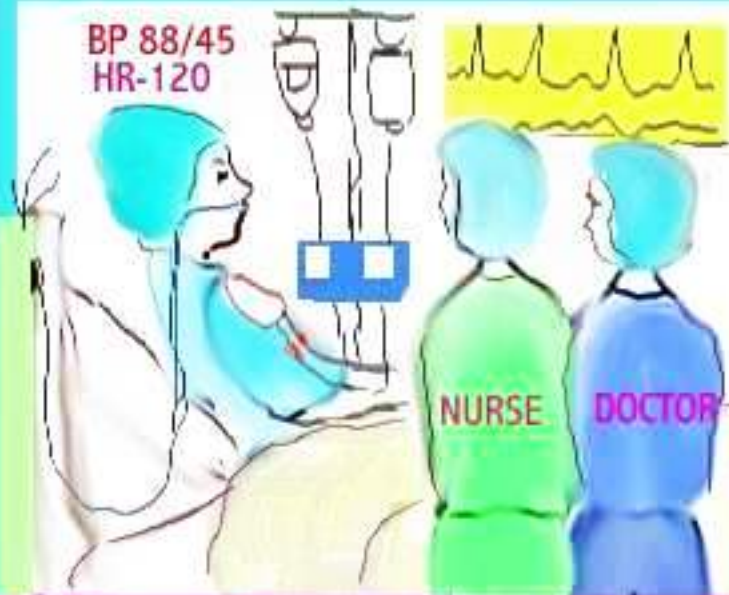




**CHAPTER I**  
**IV SOLUTIONS**

# IV MATH SOLUTIONS

BP 88/45  
HR-120



MR. R HAS JUST ARRIVED IN PACU AND IS SHOWING SIGNS OF DEHYDRATION. HIS BLOOD PRESSURE IS LOW AND HEART RATE IS HIGH.

THE DOCTOR IS ABOUT TO WRITE ORDERS TO CORRECT THE DEHYDRATION.

I AM GOING TO ORDER IV FLUIDS FOR MR. R.



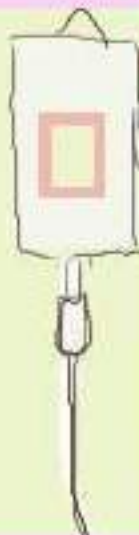
## DOCTOR'S ORDER

1. GIVE 1L (1,000 ML) LR OVER 4 HOURS.
2. THEN GIVE D5NS 1L (1,000 ML) OVER 10 HOURS.
3. CONTINUE TO MONITOR BLOOD PRESSURE / HEART RATE AND NOTIFY MD OF ANY PROBLEMS.

THE MATH SOLUTION FOR GIVING THE IV FLUIDS (PER MD ORDER) IS ON THE NEXT PAGE.

THE NURSE RECEIVES MD ORDERS.

I NEED TO  
FIGURE THIS  
OUT.



## DOCTOR'S ORDER

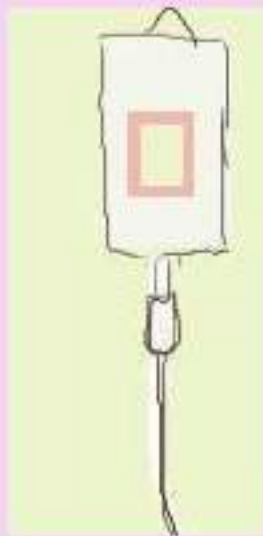
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2. THEN GIVE D5NS 1L (1,000 ML) OVER 10 HOURS.
3. CONTINUE TO MONITOR BLOOD PRESSURE / HEART RATE AND NOTIFY MD OF ANY PROBLEMS.

## FORMULA FOR IV MATH SOLUTION

1. AMOUNT IV FLUID ORDERED = 1,000 ML  
NUMBER OF HOURS ORDERED = 4 HOURS

$$\frac{1000}{4} = 250\text{ML/HR}$$





## DOCTOR'S ORDER

1. GIVE 1L (1,000 ML) LR OVER 4 HOURS.
2. THEN GIVE D5NS 1L (1,000 ML) OVER 10 HOURS.
3. CONTINUE TO MONITOR BLOOD PRESSURE / HEART RATE AND NOTIFY MD OF ANY PROBLEMS.



2.

AMOUNT IV FLUID ORDERED = 1,000ML

AMOUNT OF HOURS ORDERED = 10 HOURS

$$= \frac{1000}{10} = 100 \text{ ML/HR}$$



BP 116/65  
HR- 88



THE NURSE FOLLOWED MD ORDERS  
AND THE BLOOD PRESSURE AND  
HEART RATE IMPROVED.

1 LITER =  
1,000 ML/CC



1/2 LITER =  
500ML/CC



SAMPLE OF  
IV FLUID BAGS  
USED IN THE  
CLINICAL  
SETTING.  
IV FLUID BAGS  
USUALLY COME  
IN ML/CC.  
ML AND CC  
ARE OF EQUAL  
MEASUREMENT  
AND ARE USED  
INTERCHANGE-  
ABLY.

WHAT IF IV SOLUTION WAS  
ONLY AVAILABLE IN 500ML  
BAGS?

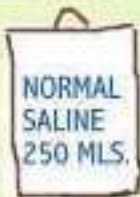
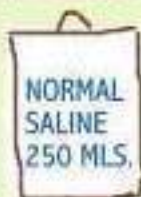
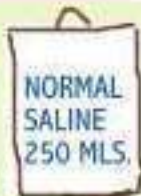
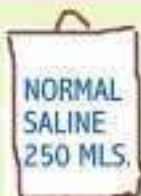
AMOUNT ORDERED = 1,000ML

AMOUNT ON HAND = 500ML  
 $= \frac{1000}{500} = 2 \text{ BAGS}$

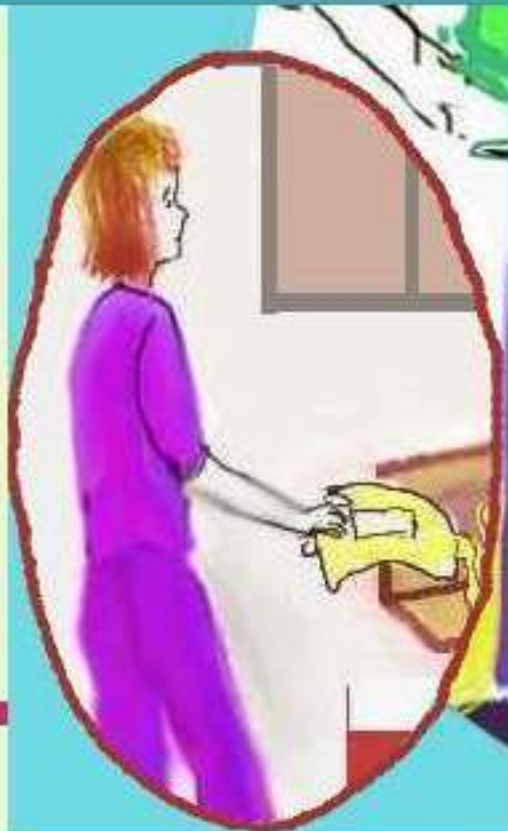


WHAT AM I SUPPOSED TO DO, I ONLY HAVE IV BAGS OF 250 MLS.

DOCTOR'S ORDER : INFUSE 1,000 MLS NORMAL SALINE IV OVER 4 HOURS. MELISSA ONLY HAS IV NORMAL SALINE 250MLS. HOW MANY SHOULD SHE GIVE?



$\frac{\text{AMOUNT ORDERED} = 1,000 \text{ ML}}{\text{AMOUNT ON HAND} = 250 \text{ ML}} = 4 \text{ BAGS}$



**STAY POSTED FOR MORE  
MATH SOLUTIONS IN THE  
CLINICAL SETTING.**

