

MEDICAL MATH

UNIT H - HTR

STEPHEN SWEENEY

MENU

- UNITS OF MEASUREMENT
- LENGTH / DISTANCE
- CAPACITY / VOLUME
- MASS / WEIGHT
- METRIC PREFIXES / CONVERSIONS
- CONVERTING METRIC AND HOUSEHOLD MEASUREMENTS
- ROMAN NUMERALS
- MILITARY / GREEWICH TIME
- Practice Question 1
- Practice Question 2
- Practice Question 3
- Practice Question 4
- Practice Question 5
- Practice Question 6
- Practice Question 7
- Practice Question 8
- Practice Question 9
- Practice Question 10

Units of Measurement

- Three different kinds of measurements
- Length / Distance
- Capacity / Volume
- Mass / Weight
- Uses the metric system
meters – m
grams – g

[MENU](#)



Length/Distance - Household

- Inch (“ or in.)
- Foot (‘ or ft.)
- Yard (yd)
- [MENU](#)



Capacity/Volume – Household

- Teaspoon (t or tsp)
- Tablespoon (T or tbsp)
- Ounce (oz)
- Cup (C)
- Pint (pt)
- Quart (qt)
- [MENU](#)



Mass/Weight - household

- Ounce (oz.)
- Pound (lb.)
- [MENU](#)



Metric prefixes/conversions

- Common metric prefixes
 - a. kilo: 1000 times – largest metric prefix
 - b. centi: 100 times
 - c. milli: 1000 times
- Metric conversions
 - a. 1 m = 100 cm
 - b. 1 m = 1000 mm
 - c. 10 mm = 1 cm
 - d. 1 L = 1000 mL
 - e. 1 mL = 1 cc
 - f. 1 g = 1000 mg
 - g. 1 kg = 1000 g

Converting metric and household measurements

- 1 in = 2.54 cm
- 39.4 in = 1m
- 1 tsp = 5 mL
- 1 oz = 30 mL
- 1 qt = 1000cc
- 2.2 lbs = 1kg
- 16 oz = 1lb (weight)
- Temperature
 1. Celsius to Fahrenheit $(C \times 1.8) + 32 = F$
 2. Fahrenheit to Celsius $(F - 32) / 1.8 = C$

Percentages

Used to express either a whole or part of a whole

Whole = 100%

Part = #%

i.e. 30 parts out of 100 = 30%



Converting percentages to decimals

Remove % sign

Move decimal point two places to left or divide by 100

i.e. $125.5\% = 125.5 / 100 = 1.255$



Converting percentages to a fraction

Drop the decimal point

Position the number over its placement value

i.e. $66\% = 66/100$ or $33/50$



Ratios

Show relationship between numbers or like values : how many of one number or value is present as compared with the other

i.e. a bleach and water solution with a 1:2 ratio means that 1 part of bleach is added for every 2 parts water



Converting decimals, fractions, percentages, and ratios

Ratios to fractions = put first number of the ratio over the second number i.e. $3:5 = \frac{3}{5}$

Ratios to decimals = divide the first number of the ratio by the second number i.e. $4:5 = 0.8$

Ratios to percentages = first convert the ratio to a decimal then move the decimal point two places to the right and add a percent sign i.e. $7:10 = 0.7 = 70\%$



Roman Numerals

- I = 1
- V = 5
- X = 10
- L = 50
- C = 100
- D = 500
- M = 1000

- [MENU](#)

****Note** – when used with medication dosages, Roman numerals may be lowercased rather than uppercased



Roman Numeral guidelines

If a smaller numeral is placed in front of a larger numeral, the smaller numeral is subtracted from the larger numeral

i.e. $IV = 5 - 1 = 4$

If a smaller numeral is placed after a larger numeral, the smaller numeral is added to the larger numeral

i.e. $MCC = 1000 + 100 + 100 = 1200$



Military Time / Greenwich time

- Time expressed using four digits
- Convert military and traditional time

0100 = 1 AM

0530 = 5:30 AM

1200 = NOON

1400 = 2:00 PM

2000 = 8 PM

2400 = MIDNIGHT

[MENU](#)



Practice Question 1

Ms. Bailey is grading book reports. She has 17 book reports to grade and it takes 30 minutes for each report. If she begins at 1430, at what time will she finish?

2300



Practice Question 2

- A bottle of orange juice has 8 oz. The patient drinks $\frac{3}{4}$ of the bottle. How many cc did the patient drink?

180 cc



Practice Question 3

- A nursing assistant must report to work at 6:30 a.m. It takes 20 minutes to drive to the hospital. At what time should she leave home if she wants to arrive early?

0600



Practice Question 4

- A plane with a heart transplant leaves Charlotte at 1630. it takes 2 hours and 45 minutes to fly to Boston and get to the hospital. What time did the heart arrive?

7:15 P.M.



Practice Question 5

- A medical office assistant orders LXVIII boxes of alcohol swabs. How many boxes were ordered?

Question 6

- Heather went into labor at 2030. she was in labor for 2 hours before driving 45 minutes to the hospital. At what time did she arrive?

11:15 P.M.



Question 7

- Cassie begins work at 1500 and works 8 hours. She also takes a 30 minutes dinner break. At what time does her shift end?

2330



Question 8

- Chris has an appointment at 1200 that will last one hour. How long will he have to get to his 1400 appointment?

1 hour



Question 9

- Your HOSA chapter has CLXIV members. How many membership cards should National HOSA send you?

164



Practice Question 10

- What time is 11:00 a.m. in military time?

1100

