**Chem 1013: mini-quiz # 18: One more Chemical Body Parts Calculations**

**Recipe manipulations A 5 pts March 27**

Your name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Heroin has the molecular formula: C21H23NO5. Its molecular weight is 369.4 g/mol.

How many grams of heroin are present if it contains 1.0828 grams of O (atomic mass 16 g/mol O.)

Mol O=1.0828 g/16 g mol-1 =0.067675

Mol Heroin/mol O=1/5= x/0.067675=>x= 0.067675/5=0.013535= mol heroin

Multiply down to get mass of heroin=> 0.013535 \*369.4=5 g

\_\_\_\_\_\_\_5\_\_\_\_\_\_ grams heroin (2 pts)

A cherry pie recipe contains:

1 quart cherries + 2 rolls dough + 3 pats of butter + 2 cups sugar= 1 cherry pie

The masses of the components are; 1 quart cherries = 250 g 1 roll dough = 150 g

1 pat butter = 30 g 1 cup sugar= 175 g

How many grams of sugar are needed to make 3 pies ? \_\_\_\_\_\_6\*175=1050\_g\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

How many pies can be made from 600 grams of dough ? \_600 g/150 g==4 rolls=>2 pies\_\_\_\_\_\_\_\_\_\_

How many cups of sugar must be combined with 4 quarts of cherries to make a whole number of pies ? \_\_\_\_\_\_\_\_\_\_8 cups\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Chem 1013: mini-quiz # 18: One more Chemical Body Parts Calculations**

**Recipe manipulations B 5 pts March 27**

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Oxycodone (`Oxy’) has the molecular formula: C18H21NO. Its molecular weight is 267 g/mol.

How many grams of Oxy are present if it contains 1.6179 grams of C (atomic mass 12 g/mol C.)

Mol C=1.6179 g/12 g mol-1 =0.13483

Mol Oxy/mol C=1/18= x/0.13483=> x=0.13483/18=0.00749= mol Oxy

Multiply down to get mass of Oxy=> 0.00749\*267 =2 g

\_\_\_\_\_2\_\_\_\_\_\_\_\_ grams Oxy (2 pts)

A cherry pie recipe contains:

1 quart cherries + 2 rolls dough + 3 pats of butter + 2 cups sugar= 1 cherry pie

The masses of the components are; 1 quart cherries = 250 g 1 roll dough = 150 g

1 pat butter = 30 g 1 cup sugar= 175 g

How many grams of dough are needed to make 3 pies ? \_\_\_\_\_3\*2 rolls=6 rolls; 6\*150=900 g\_\_\_\_\_\_

How many pies can be made from 700 grams of sugar ? \_\_700 g/175=4 cups => 2 pies\_\_\_\_\_\_\_\_\_\_

How many cups of sugar must be combined with 9 pats of butter to make a whole number of pies ?

\_\_\_\_\_\_\_\_\_2 cups sugar/3 pats butter=x/9=> x= 6 cups\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_