RSPT 1060
MATH HOMEWORK – A3

WORKING WITH %, Ratio, Proportion & Fractions – *Be sure to round properly*.

DIRECTIONS: Perform the calculations first following the rules without a calculator then check your work with a calculator.

PERCENTAGES & DECIMALS – *Be sure to round properly*

Convert from a percentage to a decimal.

1. 33% = **0.33**
2. 0.93% = **0.0093 = 0.01**
3. 3.5% = **0.035 = 0.04**
4. 0.023% = **0.00023 = 0**
5. 45.7% = **.457 = .46**

Convert from a decimal to a percentage.

6. 4.57 = **457**%
7. 77.9 = **7790**%
8. 0.87 = **87**%
9. 0.065 = **6.5**%
10. 0.0021 = **0.21**%

RATIOS & PROPORTIONS

1:1 ratio = Inhalation time of 0.5 seconds and Exhalation Time of **0.5** seconds

1:2 ratio = Inhalation Time of **2** seconds and Exhalation Time of 4 seconds

1:3 ratio = Inhalation time of 2 seconds and Exhalation Time of **6** seconds

The ratio is 1:2. Inhalation time is 0.5 second and Exhalation time is 1 seconds. Now double the inspiratory time but maintain the ratio. What are the new Inhalation time **1.0** seconds and exhalation time **2.0** seconds?

FRACTIONS – *Report all answers in simplest (lowest) terms.*

1. Circle the one that is bigger?

   1/5 or 1/8

   ½ or 1/12

2. Circle the one that is bigger?

   3/5 or 4/5

   9/25 or 5/25

3. Put into simplest (lowest) terms.

   4/12 = **1/3** 9/36 = **1/4**

   6/18 = **1/3** 7/49 = **1/7**

4. Add the fractions:

   1/7 + 3/7 = $\frac{1}{7}+\frac{3}{7}=\frac{4}{7}$

   1/6 + 1/5 = $(\frac{1}{6}x\frac{5}{5})+(\frac{1}{5}X\frac{6}{6})=(\frac{5}{30}+\frac{6}{30})=\frac{11}{30}$

   2/3 + 1/2 = $(\frac{2}{3}X\frac{2}{2})+(\frac{1}{2}X\frac{3}{3})=(\frac{4}{6}+\frac{3}{6})=\frac{7}{6}=1\frac{1}{6}$

   3/4 + 2/5 = $(\frac{3}{4}X\frac{5}{5})+(\frac{2}{5}x\frac{4}{4})=(\frac{15}{20}+\frac{8}{20})=\frac{23}{20}=1\frac{3}{20}$

5. Subtract the fractions:

   3/4 - 2/5 = $(\frac{3}{4}X\frac{5}{5})-(\frac{2}{5}X\frac{4}{4})=(\frac{15}{20}-\frac{8}{20})=\frac{7}{20}$

   4/7 – 6/7 = $\frac{4-6}{7}=\frac{-2}{7}$

   2/8 – 2/3 = $(\frac{2}{8}X\frac{3}{3})-(\frac{2}{3}X\frac{8}{8})=(\frac{6}{24}-\frac{16}{24})=\frac{-10}{24}=\frac{-5}{12}$

4/5 – 7/8 = $\left(\frac{4}{5} X \frac{8}{8}\right) - \left(\frac{7}{8} X \frac{5}{5}\right) = \left(\frac{32}{40} - \frac{35}{40}\right) = \frac{-3}{40}$

6. Multiply the fractions:

4/5 x 7/8 = $\frac{4}{5} X \frac{7}{8} = \frac{28}{40} = \frac{14}{20} = \frac{7}{10}$

2/3 x 9/16 = $\frac{2}{3} X \frac{9}{16} = \frac{18}{48} = \frac{9}{24} = \frac{3}{8}$

7. Divide the fractions:

2/3 divided by 1/4 = $\frac{2}{3} \div \frac{1}{4} = \frac{2}{3} X \frac{4}{1} = \frac{8}{3} = 2\frac{2}{3}$

5/6 divided by 2/3 = $\frac{5}{6} \div \frac{2}{3} = \frac{5}{6} X \frac{3}{2} = \frac{15}{12} = \frac{5}{4} = 1\frac{1}{4}$

8. Add the mixed fractions:

2 2/5 + 1 1/4 = $(2+1) + \left(\frac{2}{5} + \frac{1}{4}\right) = 3 + \left(\left[\frac{2}{5} X \frac{4}{4}\right] + \left[\frac{1}{4} X \frac{5}{5}\right]\right) = 3 + \left(\frac{8}{20} + \frac{5}{20}\right) = 3\frac{13}{20}$

1 1/4 + 3 3/5 = $(1+3) + \left(\frac{1}{4} + \frac{3}{5}\right) = 4 + \left(\left[\frac{1}{4} X \frac{5}{5}\right] + \left[\frac{3}{5} X \frac{4}{4}\right]\right) = 4 + \left(\frac{5}{20} + \frac{12}{20}\right) = 4\frac{17}{20}$

9. Subtract the mixed fractions:

1 3/4 - 2 4/5 = $\frac{7}{4} - \frac{14}{5} = \left(\frac{7}{4} X \frac{5}{5}\right) - \left(\frac{14}{5} X \frac{4}{4}\right) = \left(\frac{35}{20} - \frac{56}{20}\right) = \frac{-21}{20} = -1\frac{1}{20}$

2 2/3 – 3 3/8 = $\frac{8}{3} - \frac{27}{8} = \left(\frac{8}{3} X \frac{8}{8}\right) - \left(\frac{27}{8} X \frac{3}{3}\right) = \left(\frac{64}{24} - \frac{81}{24}\right) = \frac{-17}{24}$

10. Multiply the mixed fractions:

2 3/5 x 4 5/8 = $\frac{13}{5} X \frac{37}{8} = \frac{481}{40} = 12\frac{1}{40}$

1 1/3 x 2 4/5 = $\frac{4}{3} X \frac{14}{5} = \frac{56}{15} = 3\frac{11}{15}$

11. Divide the mixed fractions:

2 1/3 divided by 1 1/4 = $\frac{7}{3} \div \frac{5}{4} = \frac{7}{3} X \frac{4}{5} = \frac{28}{15} = 1\frac{13}{15}$

3 3/4 divided by 1 1/2 = $\frac{15}{4} \div \frac{3}{2} = \frac{15}{4} X \frac{2}{3} = \frac{30}{12} = 2\frac{1}{2}$

12. Convert the fraction to a decimal:

3/4 = $4\overline{)3}$ = .75

5/6 = $6\overline{)5.00}$ = $0.8\overline{3}$

13. Your test score was 45. The total possible was 50.

To convert this to a decimal, divide your score by the number possible.

$\frac{45}{50} = 50\overline{)45} = 0.9$

To convert to a %, multiply by 100 = **0.9 X 100% = 90%**