Worksheet 3 – General calculations

Mathematical Literacy – Grade 11

1. What percentage is represented by the following statements: (Round off to 1 decimal place where necessary)

   a) $\frac{22}{35}\ for\ a\ test.$

   b) $\frac{17}{18}\ parking\ spaces\ are\ full.$

   c) $23\ of\ the\ people\ in\ a\ class\ of\ 34\ are\ girls.$

   d) Joe added R3000 onto the price of a car that was originally R24 000.

   e) $\frac{182}{210}\ for\ a\ test.$

   f) $\frac{3}{7}\ people\ have\ already\ arrived.$

   g) $A\ stadium\ has\ filled\ up\ 124\ 300\ of\ its\ 140\ 350\ seats.$

   h) 9 of the 14 cars are white, give the % of cars that aren't white.

2. Mr Simpson has a baking shop and he wants to make a master list with the selling price, cost price and mark-up of various products, fill in the missing information.

PRODUCT	COST PRICE (CP)	SELLING PRICE (SP)	MARK UP (MU)
Flour (2.5 Kg)		R22.50	45 %
White sugar (2 Kg)	R 9.40	R 20.00	
Brown Sugar (2 Kg)	R 13.50		52 %
Baking powder (250 g)	R 70.68 per Kg	R28.40	
Cocoa powder (250 g)		R28.00 per 125 g	33%
Vanilla essence (250 ml)	R 33.60		12.5 %

$$CP = \frac{SP}{1+\left(\frac{MU\%}{100}\right)} \qquad SP = CP + \left(\frac{MU\% \times CP}{100}\right) \qquad MU\% = \left(\frac{SP-CP}{CP}\right) \times 100$$

3. Simplify the following expressions:

   a) $\frac{36}{4}$

   b) $a^2b^3c \times abc^4 \times a.a.b.b.c$

   c) $\sqrt{361}$

   d) $17 \times 3 + 15 - 9 \div 3 + 6$

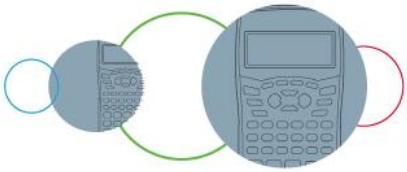
   e) $\frac{2}{3}\ of\ \sqrt{529}$

   f) $\frac{3}{4} + \frac{1}{2} - \frac{1}{6} + 1\frac{1}{3}$

   g) $\sqrt[3]{216} \times \frac{\sqrt[5]{243}}{\sqrt[3]{8}}$

   h) $R\ 24 + 30\%$

   i) $12 \times 2 + (13 - 5) \div 6 \times 2 \times 3 \times \frac{1}{4}$



4. A fruit drink is made by combining one part concentrate to five parts water, answer the questions that follow.
   a) What is the ratio of concentrate to water?
   b) According to the ratio, if I use $45\ ml$ of concentrate, how much water must I add to it?
   c) How much of the fruit drink have I made if I started with $45\ ml$ of concentrate?
   d) If I have used $2.5\ cups$ of concentrate and $12\ cups$ of water, will the fruit drink taste right? If not, will it be too strong or too weak?
   e) I decide to make up a different fruit drink that says that the ratio is 2:7 (concentrate : water) how much concentrate must I add to $1{,}4\ l$ of water?

5. The Right-Fit Clothing Company pays workers in its factory $R\ 57.00$ per hour. The maximum number of hours a worker may work in one day is $10\ hours$ but a worker may only work a maximum of $6\ days$ a week. Answer the questions that follow.
   a) What will a worker earn if he works for $8.5\ hours$?
   b) What will the worker earn if he decides to work the maximum number of hours in a week?
   c) What is the shortest amount of time it will take for the worker to earn $R\ 7\ 410.00$?
   d) A worker needs $R\ 145$ to cover his daily expenses and he wants to save $R\ 5\ 100$, how long must he work for to earn the money? (Assume that he works all day, 6 days a week until he has saved up the money and that he doesn't spend money if he does not work.)

6. The learners at Happy High School write an english exam. The exam is out of 150 marks and they are given 2 and a half hours to write.
   a) How long is their exam, in minutes?
   b) Calculate how fast the learners need to work to ensure that they are finished on time.

7. Calculate the following:
   a) The price of 1 egg if 6 eggs cost R 11.10
   b) The price of 100g of strawberries if 450 g cost R 55.35
   c) The price of 1 Kg of flour if 2.5 Kg cost R 20.00
   d) The price of 1 kg of yoghurt if 600g cost R15.49
   e) The price of 250 ml of Iced tea if 1.5L cost R18.99

8. Convert the following quantities to the desired units.
   a) $17\ m \rightarrow km$
   b) $R\ 450.89 \rightarrow cents$
   c) $22\ days \rightarrow hours$
   d) $300\ months \rightarrow years$
   e) $4500\ seconds \rightarrow hours$
   f) $0.4\ grams \rightarrow kilograms$
   g) $200\ l \rightarrow ml$
   h) $5\ weeks \rightarrow hours$