SHARP

Worksheet 1 – General calculations

Mathematical Literacy – Grade 12

1. There are 260 beads in a jar. There are 80 green beads and there are twice as many red beads as there are blue beads. Use this information to answer the questions that follow.
   a) How many blue beads are there in the jar?
   b) How many red beads are there in the jar?
   c) What is the ratio of blue beads to red beads to green beads?
   d) How many red beads would I have to add if I wanted to keep the ratio the same and I used 100 green beads?
   e) How many blue beads would I have to add to keep the ratio the same and I used 100 green beads?
   f) What is the total number of beads if I use 100 green beads and I keep the ratio the same.

2. Simplify the following expressions:
   a) $42 \div 6 \times 2 + 3 \times 2 \div 8 \times 6$
   b) $\frac{2 \times 3}{x\,y} \times \frac{5}{6} \times \frac{7y}{2} \div \frac{9}{3x}$
   c) $7^3 \times 4^6 \div 2^{11}$
   d) $\frac{\sqrt{256}}{4}$
   e) $35\,\%\,of\,(280 \times 3^3)$
   f) $\frac{3}{4} + \frac{1}{2} - \frac{1}{6} + 1\frac{1}{3}$
   g) $q^4ps^7 \times \frac{p^3sqr^2}{p^4} \times r.r.p.r.q.q.s.r.s$
   h) $\frac{3}{7}\,of\,21^2$
   i) $\frac{2}{3} + \frac{5}{8} + \frac{9}{12} - \frac{1}{7}$
   j) $\sqrt[3]{216} \times 11^2 + 24 \div \sqrt[4]{10000}$
   k) $\frac{27}{35} \times 100$
   l) $482^4 - 100 \div 10$

3. Convert the following quantities to the desired units.
   a) $10\,ml \rightarrow litres$
   b) $3.6\,km \rightarrow mm$
   c) $50\,grams \rightarrow kg$
   d) $10\,042\,cents \rightarrow Rands$
   e) $4\,hours \rightarrow seconds$
   f) $0.5\,cm \rightarrow km$
   g) $750\,minutes \rightarrow hours$
   h) $R23.54 \rightarrow cents$
   i) $3\,years \rightarrow seconds$
   j) $1.5\,litres \rightarrow ml$

4. Ben owns a garden service; he employs various workers to tidy up gardens in his area. Use the information provided to answer the questions that follow.

   a) If Ben employs workers and pays them R 80 per hour, how much does he pay to employ all 3 workers for 4 hours?

   b) It takes 1.5 hours for 1 worker to tidy up 1 garden, and Ben has 12 gardens to tidy up. How long will it take two workers to complete all the jobs?

   c) It cost R 45 to buy the fertiliser and other consumables to tidy up each garden. Calculate the total cost for tending all 12 gardens. Remember that he uses 2 workers to tidy all the gardens

   d) If Ben wants to make a 40% profit for tidying up gardens, what should he charge each person for tidying up their garden?

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

   a) $\frac{9}{19}$ *men have beards* (% *of men with beards*)

   b) $\frac{24}{50}$ *sweets have been eaten* (% *of sweets left over*)

   c) $7m^2$ *out of* $43\ m^2$ *have been painted*

   d) $\frac{26}{40}$ *for a test*

   e) $\frac{146}{158}$ *paking spaces are full* (% *of empty parking spaces*)

   f) $\frac{21}{24}$ *people have already arrived.* (% *of people that have arrived*)

   g) 14 *out of* 25 *in the class are girls* (% *of boys*)

   h) 10 *out of* 18 *cars are silver* (% *of cars that are not silver*)

6. Calculate the following:

   a) The cost of 6 bottles of water if 1 bottle cost R 2.88

   b) The cost of 400g of feta cheese if 100g cost R 8.50

   c) The price of 1 avocado if 4 avocados cost R 17.00

   d) The cost of 1 Kg of baking powder if 125g cost R 9.20

   e) The price of 1 lemon if 4 lemons cost R 10.56

   f) The price of 1 can of coke if 24 cans cost R 122.40

   g) The cost of 12 Kg of pears if 1.5 Kg cost R 12.00

7. The learners from Excellent School have received their exam time table; use the time table on the next page to answer the questions that follow.

	Session 1			Session 2		
Date	**Subject**	**Time allocation**	**Mark allocation**	**Subject**	**Time allocation**	**Mark allocation**
Mon 3 June	Geography P1	3 hours	180	Geography Paper 2	1 hour 30 min	45
Tues 4 June	Economics/ Visual art theory	3 hours 3 hours	300 150	CAT practical	2 hours	100
Wed 5 June	isiZulu P1/ Afrikaans P1	2 hours 2 hours	100 70	EGD P1	3 hours	80
Thurs 6 June	History	3 hours	300	English P2	2 hours 30 min	80
Fri 7 June	isiZulu P2/ Afrikaans P2	2 hours 2 hours 15 min	120 80	English P3	2 hours	60
Mon 10 June	Mathematics P1/ Math Literacy P1	3 hours 2 hours	180 150	Visual art PRAC	3 hours	Total 300
Tues 11 June	English P1	2 hours	120	Life Orientation	1 hour 30 min	100
Wed 12 June	Mathematics P2/ Math Literacy P2	3 hours 2 hours 15 min	180 160	CAT theory	3 hours	180
Thurs 13 June	Consumer studies/ Accounting	3 hours 3 hours	150 180	EGD P2	3 hours	80
Fri 14 June	Physical science P1	2 hours	120	Visual art PRAC	3 hours	Total 300
Tues 18 June	Business studies	3 hours	300			
Wed 19 June	Visual art PRAC	4 hours 30 min	Total 300	Visual art PRAC	3 hours 30 min	Total 300
Thurs 20 June	Physical science P2	2 hours	120	Visual Art PRAC	2 hours 30 min	Total 300
Fri 21 June	Life Science	2 hours 30 min	150			

a) How many hours does a student spend on their visual art practical?

b) Calculate how many marks a learner has to complete in every minute of their business studies paper, assuming they want to finish in the last minute.

c) The geography teacher told the class that their term mark is based only on their exam marks. Can you come up with a formula that the teacher would use to calculate this geography term mark?

d) Calculate the total number of hours a learner would spend writing exams if a learner took the following subjects: English, isiZulu, mathematical literacy, geography, EGD, CAT and Life Orientation?

e) A learner completed only 80% of their accounting exam paper, how many marks did they leave out?