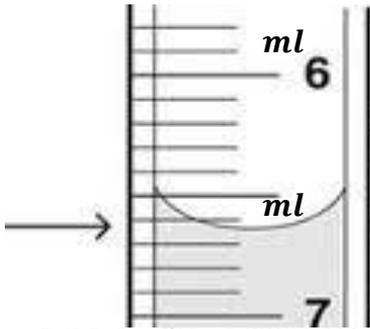


# SHARP

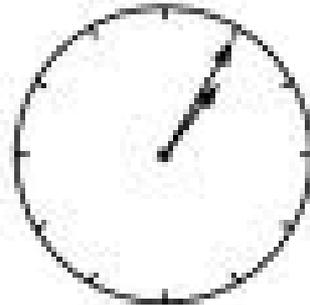
## Worksheet 2 – Measurement Mathematical Literacy – Grade 11

1. Look at the pictures below and give the measurement and the appropriate unit of measurement for each picture.

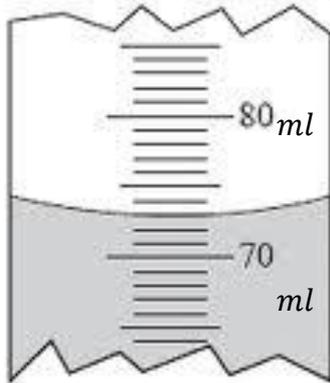
a)



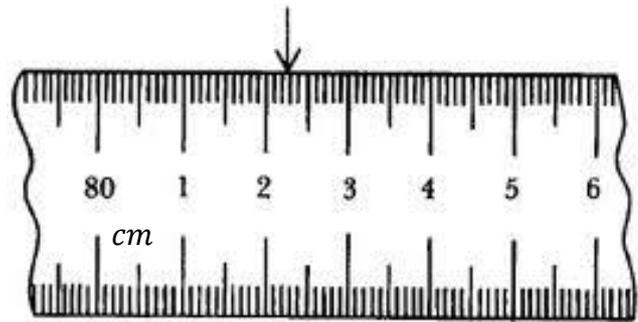
b)



c)



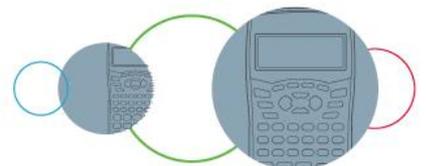
d)



e)



f)



2. Convert the following quantities: (You can use the given formulae to help you where necessary)

$$1 \text{ l} = 1000 \text{ cm}^3$$

$$1 \text{ Kg} = 2.20462 \text{ pounds}$$

$$^{\circ}\text{C} = (^{\circ}\text{F} - 32^{\circ}) \div 1,8$$

$$^{\circ}\text{F} = ^{\circ}\text{C} \times 1,8 + 32$$

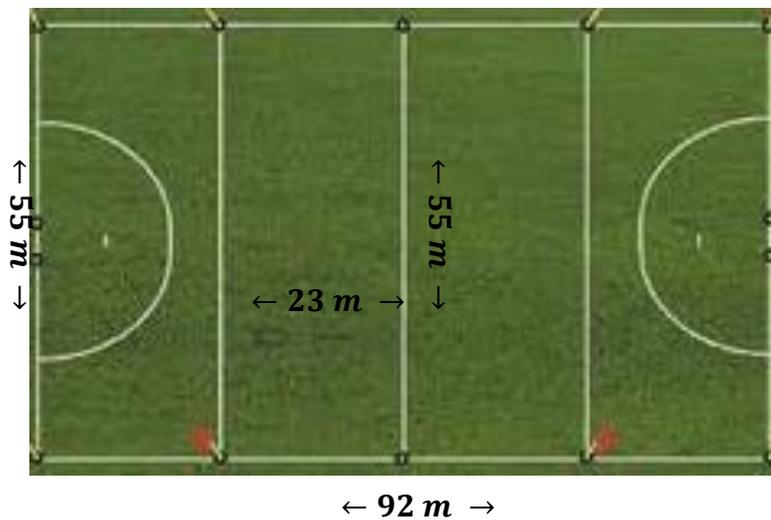
$$1 \text{ ton} = 1000 \text{ Kg}$$

- |                          |                           |
|--------------------------|---------------------------|
| a) 50 g → Kg             | b) 20 cm → m              |
| c) 0.61 l → ml           | d) 180 °C → °F            |
| e) 3 cm <sup>3</sup> → l | f) 0.5 tons → g           |
| g) 18 pounds → Kg        | h) 20 Kg → tons           |
| i) 0.15 Km → mm          | j) 25 l → cm <sup>3</sup> |
| k) 0.805 Kg → g          | l) 255 ml → l             |
| m) 13 °F → °C            | n) 0.69 Km → m            |

3. Convert the following units of time: (assume months have 30 days)

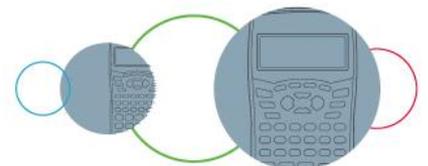
- |                              |                              |
|------------------------------|------------------------------|
| a) 13 days → hours           | b) 75 days → months          |
| c) 16 minutes → seconds      | d) 561 600 minutes → months  |
| e) 3 years 3 months → days   | f) 12 960 000 seconds → days |
| g) 2 073 600 seconds → hours | h) 144 540 hours → years     |
| i) 1 095 days → years        | j) 10 years → minutes        |

4. Greg, the grounds man at the Super Star Hockey Club, is asked to repaint the lines on the hockey field.



radius of the D:  
14.63 m

- Calculate the perimeter ( $P = 2(l + b)$ ) of the hockey field.
- Calculate the perimeter of the D (semi-circle that marks the goal scoring area). Use the formula  $P_{\text{semi circle}} = \pi r$ .
- What is the total length of the lines he has to paint for one field?
- Greg is asked to paint four fields, what is the total length of the lines he has to paint?



5. The Ngobeni family uses  $x$  litres of water per day. Use the given information to answer the following questions:
- The Ngobeni family uses 3850 ml of water per day for cooking and drinking, 90 l per day for bathing, 105 l per day in the shower, they wash dishes in the sink which uses 3100 ml, they run two loads of washing which uses 70 l of water per load, and they use 76 l to flush the toilet. 1 Kilolitre = 1000 litres*
- How many litres of water do the Ngobeni family use per day?
  - How many litres of water are used when one person showers, if 3 people shower per day.
  - How many litres of water did the family use in the month of March? (assume they used the same amount of water every day)
  - If the family pay R 5.56 per Kl of water used, how much do they pay in March?
  - Suggest two possible ways for the Ngobeni family to save water.

6. Janet wants to bake cookies; she decides to use the following recipe:

*12 oz chocolate chips*

*8 oz caster sugar*

*1 tsp vanilla essence*

*12 oz plain flour*

*8 oz butter*

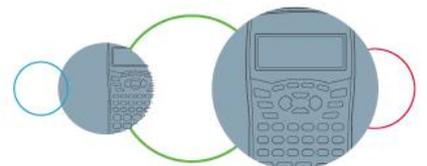
*2 eggs*

Recipe makes 24 chocolate chip cookies

1 oz (ounce) = 28.3495 grams



- Janet is not able to measure quantities in ounces, convert the recipe from ounces into grams.
- If Janet wants to make 180 cookies, what should she multiply the recipe by to make the correct amount of cookies?
- How many eggs would Janet use to make 180 cookies?
- If Janet sold 48 of her chocolate chip cookies at R 5.00 each and it cost R 51.50 to make a batch of 24 cookies. How much profit did Janet make on the sale of the cookies?
- What is the cost price of making 1 cookie?
- Janet was asked to make one batch of cookies, and she sold each one for R 4.00. How much profit did she make on that batch of cookies?



7. Use the map below to answer the questions that follow:



- How many *Km* are represented by 4.15 *cm*?
- Measure how far Johannesburg is from Durban (in *cm*).
- How far is Johannesburg from Durban (in *km*).
- How far (in *Km*) is Cape Town from Port Elizabeth?
- How far would I travel if I travel from Ladysmith to Bloemfontein and then to Johannesburg? (assume the route travelled is direct)
- In reality driving from Ladysmith to Bloemfontein is a 423 *Km* trip. This is larger than the number of kilometres measured in answer e) explain the reason for this.
- If you live in Pretoria (Tshwane) and you wanted to visit De Aar, Durban, Polokwane, Richards Bay and Upington before returning home. In which order would you visit these towns and give a reason for this answer.

8. Gavin is asked to supply juice to a soccer team during half time and he decides to make the juice from a concentrate mix.

- The concentrate that Gavin bought is made in a ratio of 5:1 (water to concentrate). How many *ml* of concentrate must Gavin add if he uses 180 *ml* water?
- How many *ml* of concentrate must Gavin use to make 3l of juice?
- If each soccer player needs to drink 300 *ml* of juice how many litres of juice does Gavin need to mix for 30 players?
- If the juice concentrate costs R 17.99 *per litre* and Gavin is making juice for the 30 soccer players, how much does he spend on concentrate?
- If Gavin decided to sell his juice at R 2.50 per cup and he sold 70 (300 *ml*) cups of juice. How much profit or loss did he make?

