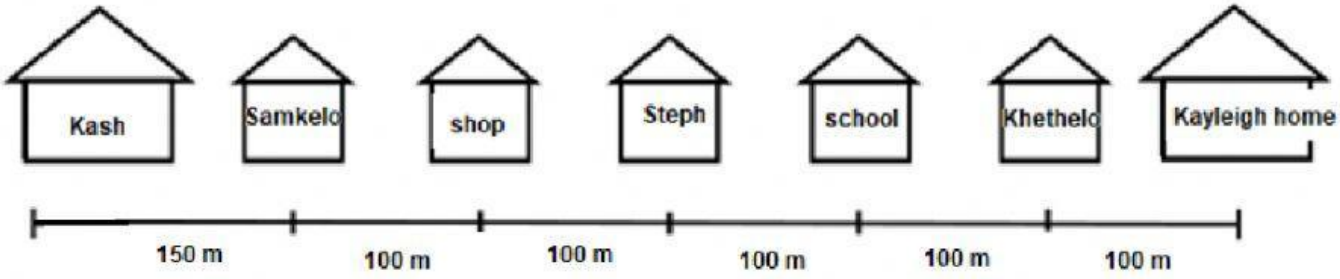
Motion worksheet 3

Frames of reference

When you explain where an object is, it is important to state where you are measuring their position from.

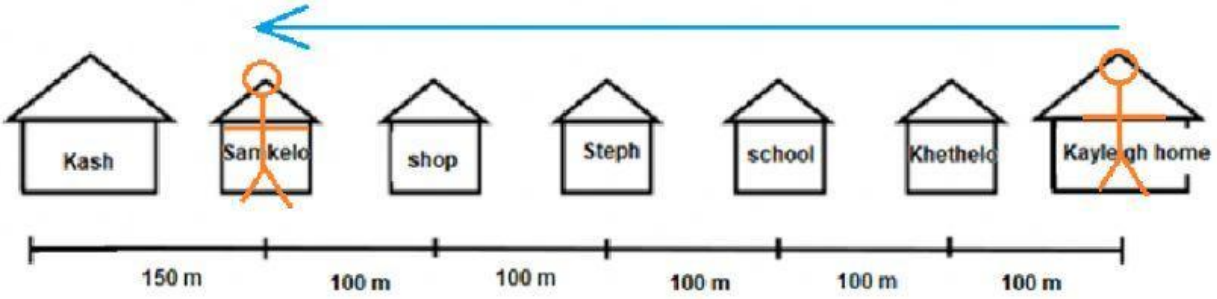
This is known as a frame of reference

Eg



Kayleigh decides to take a walk to Samkelo's house on sat morning.

She covers a distance of 500 m in total.



If measured from **Kayleigh's** own house, her position is:

500m west of **Kayleigh's house**

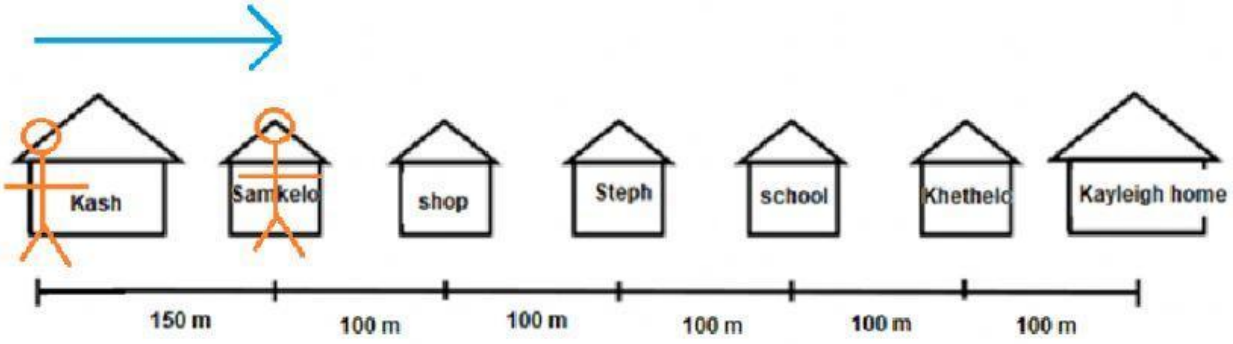
However if the point that you are measuring her position is **from Khethelo's** house, then her position is:

400 m west

And if you measured her position from School:

300 m west

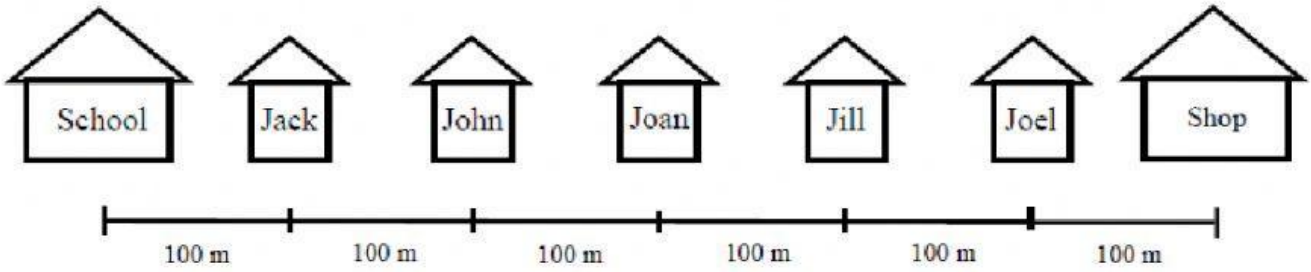
Her position from Kash's house: 150 m East



This is known as a frame of reference

Your distance depends on where you are measuring it from.

Exercise 4:



1. You are at Jill's house watching movies

   What is your position relative (compared) to:

   {use direction as left and right)

1.1 John's house

_____ _____ {direction}

1.2 Joel's house

1.3 School

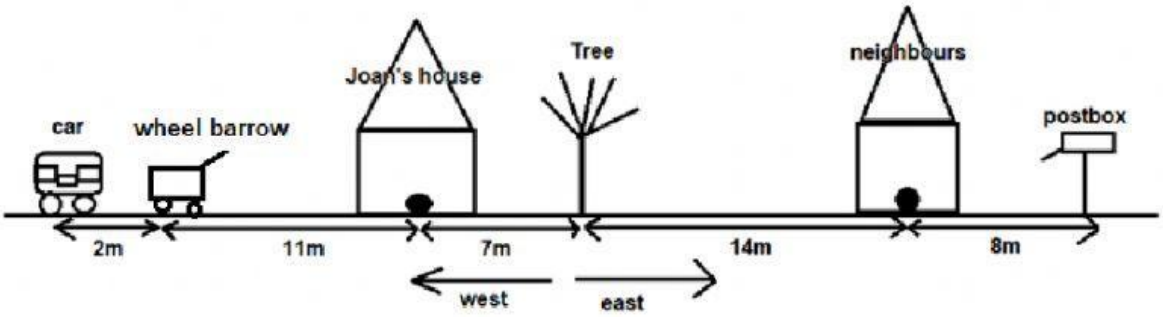
1.4 The shop

1.5 Jack's house

QUESTION 2

Joan decided to go for a walk, starting from her house.

The diagram below shows the measurements between places on the route where she walks.



Take Joan's house as the **point of reference** and **East as a positive direction**.

2.1 Complete the following table showing Joan's position relative to her house.

	Description of her position in the diagram e.g "Joan is at the …."	Position using + and – signs	Position using East or West
Position 1	**Joan is at the postbox**		
Position 2	Joan is at the _____		**21m East**
Position 3	Joan is at the _____	**-13m**	
Position 4	Joan is at the _____		**11m West**

2.2 Describe the

2.2.1 the position of the wheel barrow relative to the tree

_____ {magnitude} _____{direction- indicated as north, east, south or west}

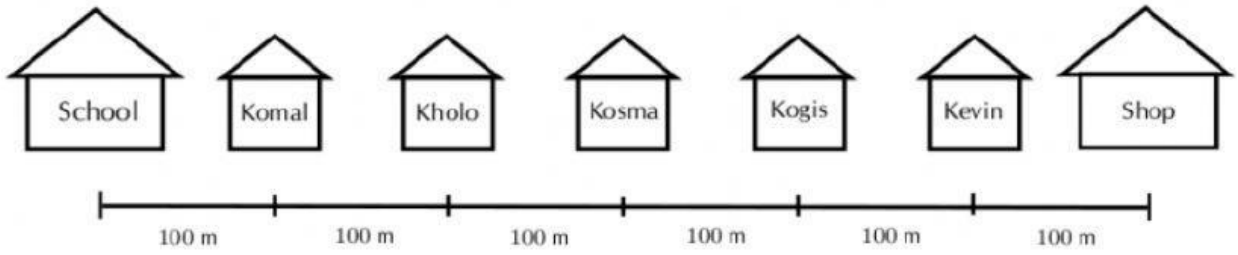
2.2.2 the position of the neighbours relative to the car

_____ {magnitude} _____{direction- indicated as north, east, south or west}

2.2.3 position of the tree relative to the car wheelbarrow

_____ _____

Question 3



State the position of the following from the reference point of Kogi's house

3.1 Komal's house

_____ _____ {direction}

3.2 School

_____ _____ {direction}

3.3 Kosma's house

_____ _____ {direction}

3.4 Shop

_____ _____ {direction}

3.5 Kholo's house

_____ _____ {direction