Mathematics for Grade 7

UNIT SUMMARY

Addis Ababa Education Bureau

መረጃዎችን በፍጥነት ለማግኘት የዩቲዩብ ፣ የቴሌግራም ፣ የፌስቡክ እና የትዊተር ገፃችንን ሰብስክራይብ ያድርጉ!

You Tube: https://www.youtube.com/watch?v=TWkBGoeYCNQ

Telegram : https://t.me/wwwAddisAbabaeducationbureau

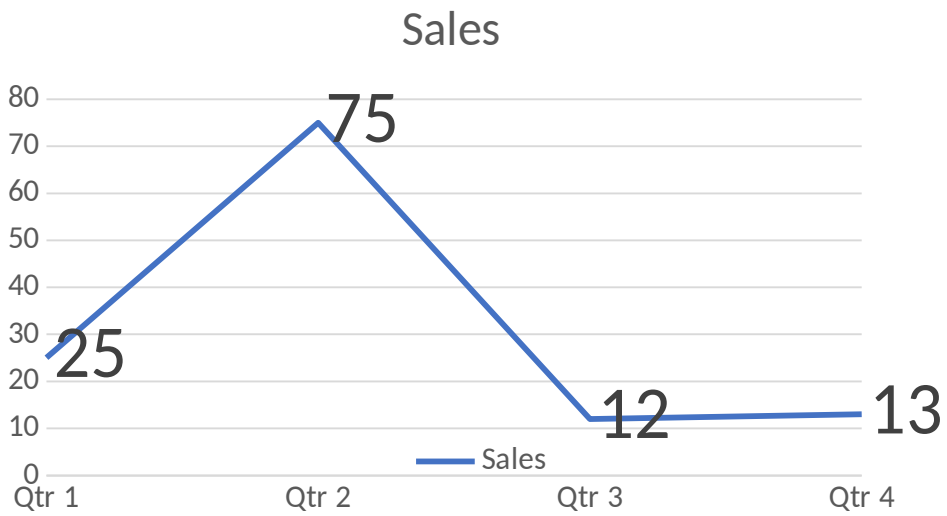
Twitter : https://twitter.com/aacaebc

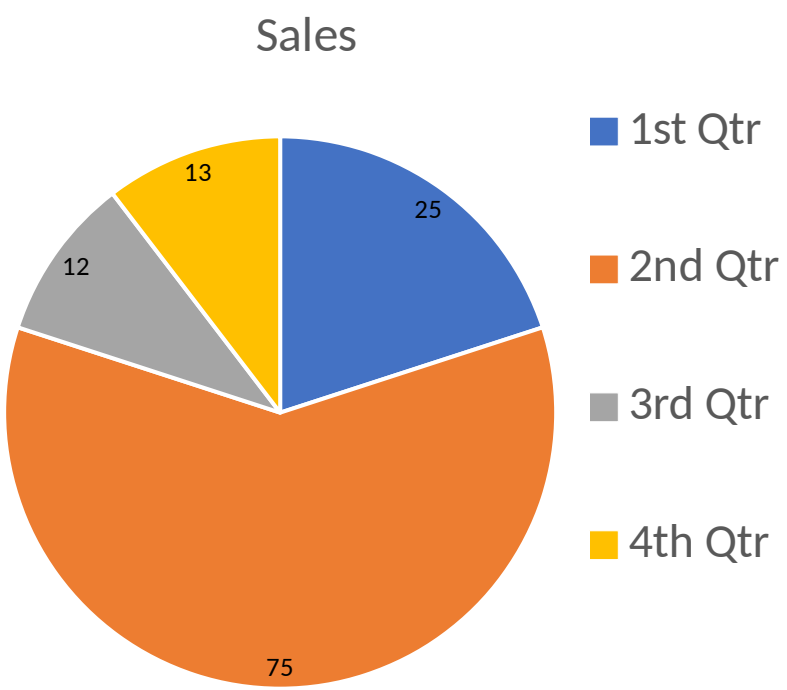
Facebook : https://www.facebook.com/aacityeducationcommunication

እንራራቅ፣ እንታጠብ እንዲሁም አንጨባበጥ

CHAPTER FOUR

Data Handling





DATA HANDLING

The word **'Data'** means collection of information in the form of numerical figures, or a set of given facts..

Collection of data

You can collect a data :

- **By using questionnaires**
- **By making observation and recording the results**

- **By carrying out of an experiment**
- **From records or database**
- **From the internet**
- **By measuring and recording the result**

Designing questions to collect data when you writing questions for a questionnaire:

- **Be clear what you want to find out, and what data you need.**
- **Ask short, simple questions.**
- **Provide tick boxes with possible answers.**

Presentation of data

You can be represented the data by ;-

1. Tally graph
2. Line graph
3. Circle graph

1. Tally graph method of representing

A tally mark is the symbol used to represented a unit of data

- Tally chart (frequency table shows the frequency of different numbers of friends (how often each number occurred)
- Tally marks are grouped in five to make easier to count

 is easier to count than



Remember  represents 5 members of the group (sample).

Example 1: Consider the following data collected from the scores of 16 sample students in a mathematics examination: Score of 40 students on a mathematics examination.

47	41	37	42
28	38	42	47
42	48	48	48
39	44	47	42

47 41 37 42 28 38 42 47

42 48 48 48 39 44 47 42

Solution : We have a group of sample students and their Mathematics scores. The tabular form representing the tally marks is as shown here.

Number of friends	Tally	Nº of students (Frequency)
28	|	1
37	|	1
38	|	1
39	|	1
41	|	1
42	| | | |	4
44	|	1
47	| | |	3
48	| | |	3

2. LINE GRAPHS

Line graph is the most commonly used to represent two related fact and continuous data.

-To plot line graph you can take an axis of reference namely a vertical and horizontal line at right angles to each other at origin.

Example 2:A car uses 1 liters of petrol for every 15 km it travels.

Copy and complete the below Table a/ Showing how much petrol the car uses.

b/Draw a graph from the information in your table.

c/ Work out how much petrol is used to travel 10km

Distance travelled in km	0	15	30	45	60
Petrol used in liters	0	1			

Solution: a / when the car travels 30 km

15 km = 1 liter

30km = x

15km × x = 30 km × 1 Liters

$$x = \frac{30\ km \times 1\ Liters}{15km} = 2\ Liters$$

when the car travels 45 km

15km = 1 liters

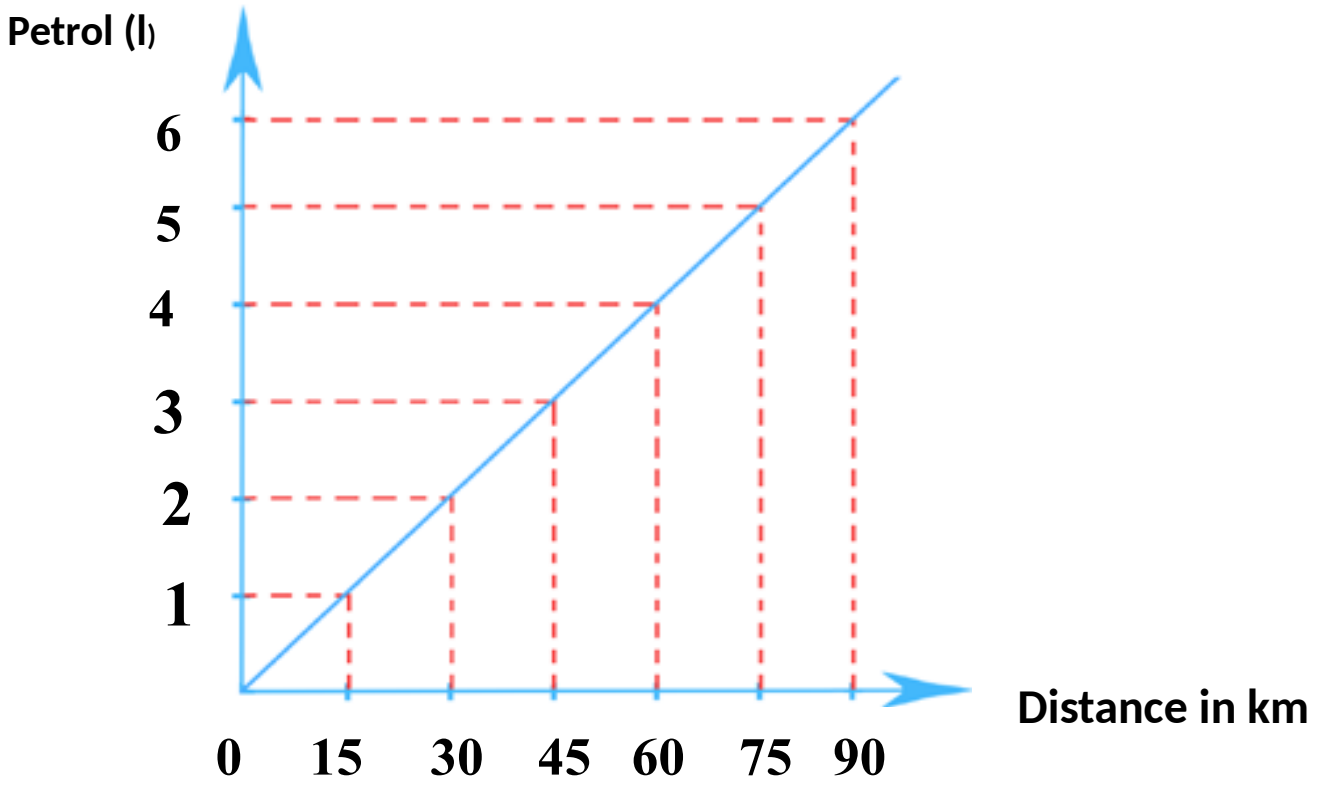
45 km = x

1 5 km × x = 45 km × 1 liters

$$x = \frac{45\ km \times 1\ liters}{15km} = 3\ Liters$$

Distance travelled in km	0	15	30	45	60
Petrol used in liters	0	1	2	3	4

b) Plot the points (0, 0), (15,1),(30,2) ,(45,3), (60, 4), (75, 5) (90, 6) draw a graph



c/ Work out how much petrol is used to travel 10km.

$$15\text{km} = 1 \text{ liters}$$

$$10\text{km} = x$$

$$15\text{km} \times x = 10\text{km} \times 1\text{litres}$$

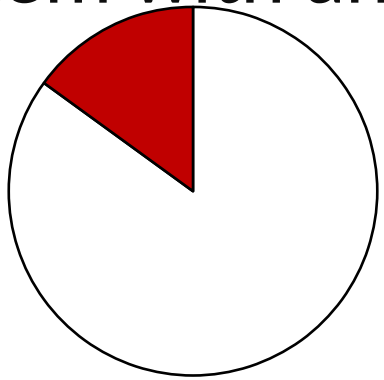
$$x = \frac{10\text{km} \times 1 \text{ liters}}{15\text{km}}$$

$$x = \frac{2}{3} \text{ liters}$$

$$x = 0.67 \text{ liters}$$

3. PIE CHARTS

Pie chart is a very common and accurate way of representing data specially useful for showing the relation one item with another and the whole items



A pie chart or a Circle graph is a circular representation of data.

A pie chart not only represents frequency but also numerical proportion. Each section of a pie chart is the proportionate quantity of the whole data.

A good graph should contain the following points:

a) Have a title

b) Be well proportioned

c) Have scales clearly marked and labeled

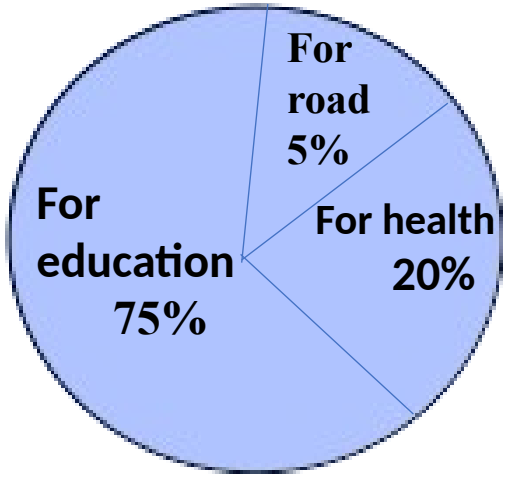
d) Different colors which shade each data

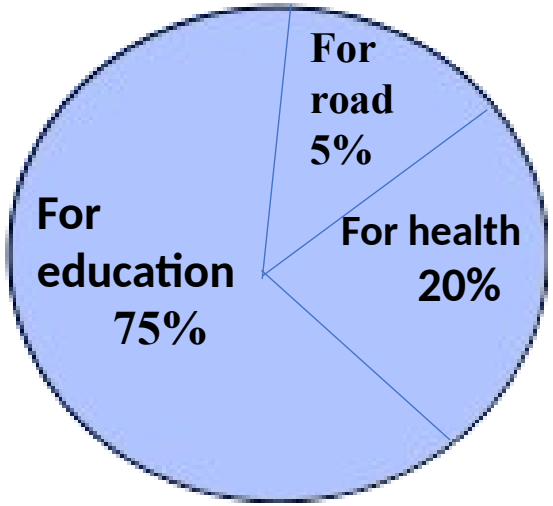
e) Show source of the facts that it represents

Sector of the circle is the portion of a circular region enclosed between **two radii and part of the circumference (an arc)**

- **And the total value of a pie chart is always 100%**
- **100% is equal to 360 degree this give the idea that 1% can represented by 3.6 degree.**

- The below pie chart shows the budget **birr 100,000** for the development of the district is as given below. How much money did the government spend for **education** and also degree represent **for road**





Solution : A) A spends 75% on education.

If total budget is birr 100, 000 then

For education = 75% x 100,000

=75/100x 100,000 = **birr 75,000**

B) A spend 5% for road out of 100%

then , for road = 5% x 360 degrees

= 18 degrees

Activity

1. The budget for social development program of a district is given as follows (See the below table)

Item	Amount(Birr)
Education	160,000
Public health	300,000
Community development	40,000

Construct a circle graph or pie chart representing this information.

2.Explain some ways of presenting data

3.The expenditure on different budget title of Ato Abebe in a month is given below

Budget	Food	Clothing	House rent	Saving	Other	Total
Expenditures (birr)	1800	1000	1300	800	1100	6000