Important Concepts . . .

Preview Review

Mathematics

Grade 6

W3 - Lesson 2: Bar Graphs, Line Graphs, and Circle Graphs

V5-07

Important Concepts of Grade 6 Mathematics

W1 - Lesson 1 ..... Basic Facts, Basic Operations, and Integers
W1 - Lesson 2 ..... Place Value, Whole Numbers, Decimals, and Common Fractions
W1 - Lesson 3 ..... Improper Fractions and Mixed Numbers
W1 - Lesson 4 ..... Ratios and Percents
W1 - Lesson 5 ..... Number Operations with Decimals
W1 - Quiz
W2 - Lesson 1 ..... Factors, Multiples, and Prime Factorizations
W2 - Lesson 2 ..... Metric Measurement
W2 - Lesson 3 ..... Perimeter and Area
W2 - Lesson 4 ..... Surface Area and Volume
W2 - Lesson 5 ..... Working with Angles and Drawing Objects and Shapes
W2 - Quiz
W3 - Lesson 1 ..... Transformations
W3 - Lesson 2 ..... Bar Graphs, Line Graphs, and Circle Graphs
W3 - Lesson 3 ..... Collecting and Analyzing Data
W3 - Lesson 4 ..... Number Patterns, Magic Squares, and Problem Solving
W3 - Lesson 5 ..... Probability and Outcomes
W3 - Quiz

Materials Required: A textbook is not needed. This is a stand-alone course.

Mathematics Grade 6
Version 5
Preview/Review W3 - Lesson 2

Publisher: Alberta Distance Learning Centre
Author: Elgin Pawlak
In-House Teacher: Sue Rees

Project Coordinator: Dennis McCarthy
Preview/Review Publishing Coordinating Team: Nina Johnson, Laura Renkema, and Donna Silgard

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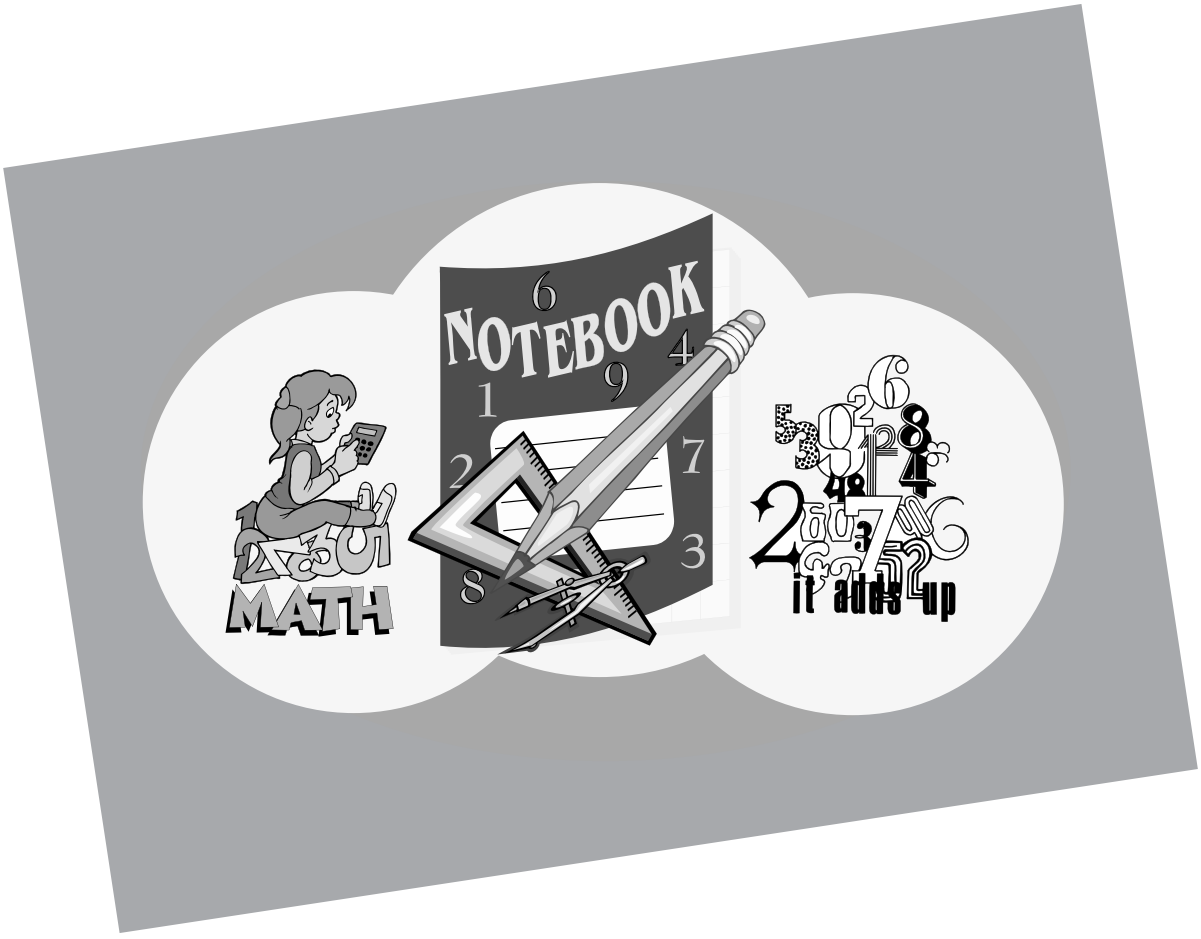
Preview/Review Concepts for Grade Six Mathematics



W3 - Lesson 2:
Bar Graphs, Line Graphs, and Circle Graphs

OBJECTIVES

By the end of this lesson, you should

- read and draw bar graphs
- read and draw line graphs
- read and draw circle graphs

GLOSSARY

bar graph - a graph consisting of parallel, usually vertical bars or rectangles with lengths proportional to the frequency with which specified quantities occur in a set of data

double bar graph - a bar graph comparing two sets of data

circle graph (pie chart) - a graph that shows parts of a whole circle

line graph - a graph formed by joining points on a grid

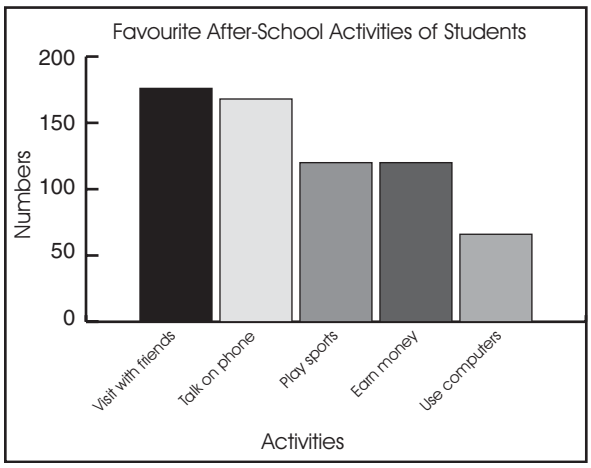
W3 - Lesson 2: Bar Graphs, Line Graphs, and Circle Graphs

Welcome to W3 - Lesson 2! In this lesson you will study bar graphs, line graphs, and circle graphs. You will start by reading graphs and answering questions. Later, you will draw graphs of your own.

Reading Graphs

1. Students were surveyed to determine their favourite after-school activities. This graph shows the results of the survey. Use the graph and chart to answer the questions below.

Activities	Number
Visit with friends	175
Talk on phone	170
Play sports	120
Earn money	120
Use computers	65



a. What is the title of the graph?

_____

b. What is the heading of the vertical axis?

_____

c. What is the heading of the horizontal axis?

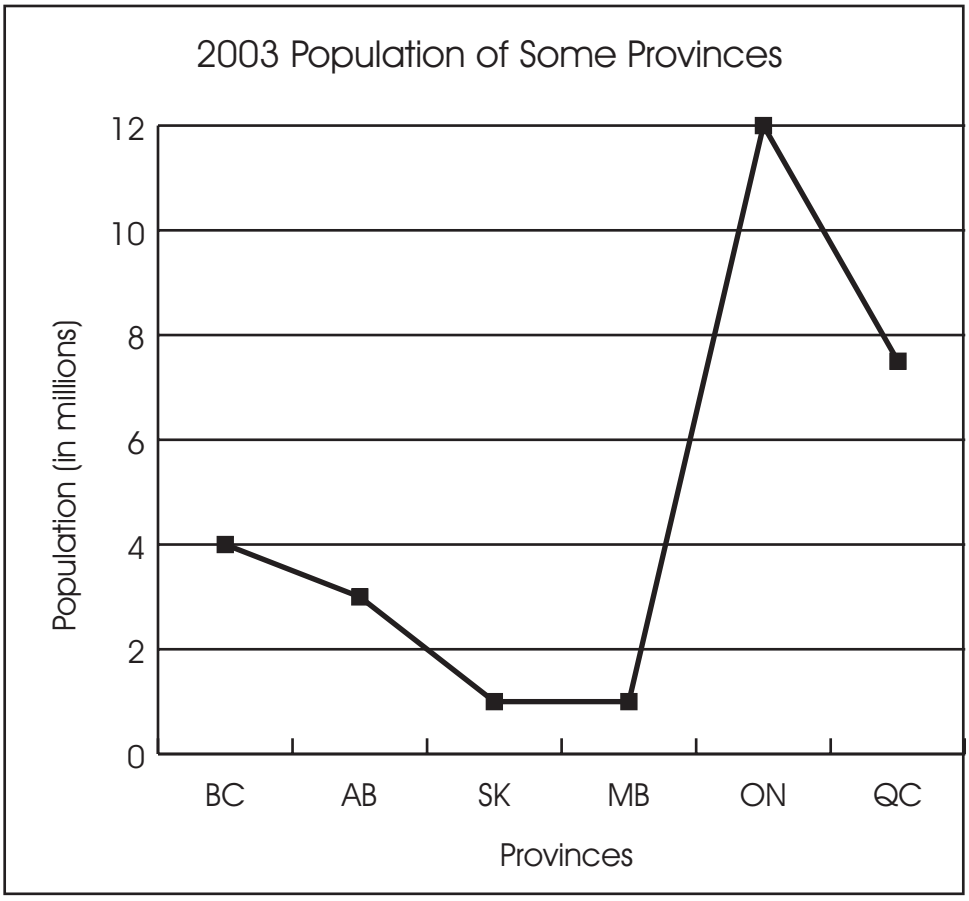
_____

d. How many students were surveyed?

e. How many more students picked "Play sports" than "Use computers"?

f. How many more students picked "Talk on phone" than "Earn money"?

2. This graph shows the population of six Canadian provinces in January 2003. Use the graph to answer the following questions. Give your answer to the nearest half-million (e.g., ON = 12 million, QC = 7.5 million).



a. What is the title of this graph?

_____

b. What is the heading of the vertical axis?

_____

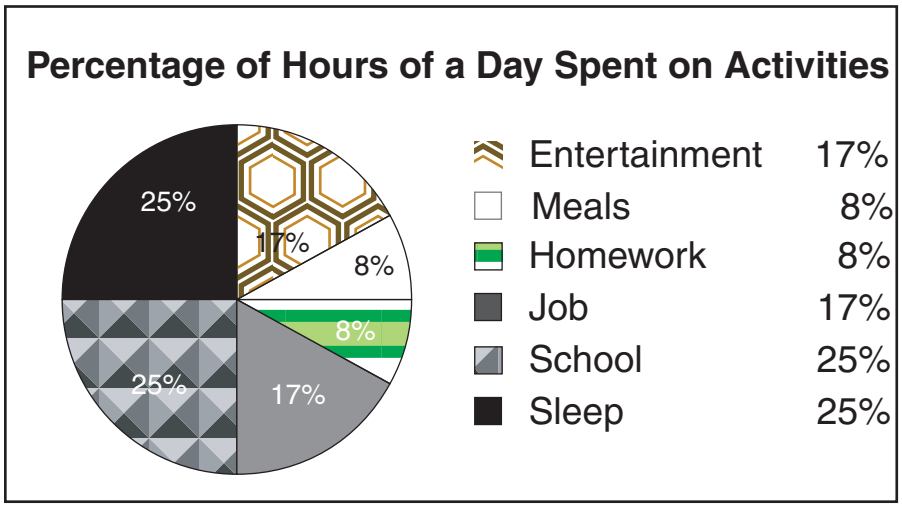
c. Which province has the largest population? How many people?

d. What two provinces have the smallest populations? Approximately how many people are in each province?

e. What is the total estimated population of the four western provinces (BC, AB, SK, and MB)? (Round your answer to the nearest million)

f. How much larger is the population of Ontario than that of Quebec? Show how you calculated your answer.

3. Use the circle graph below to answer the following questions.



a. What is the title of the graph?

b. What is the total percent when you add the percentages of all six activities?

c. How many hours are spent each day sleeping?

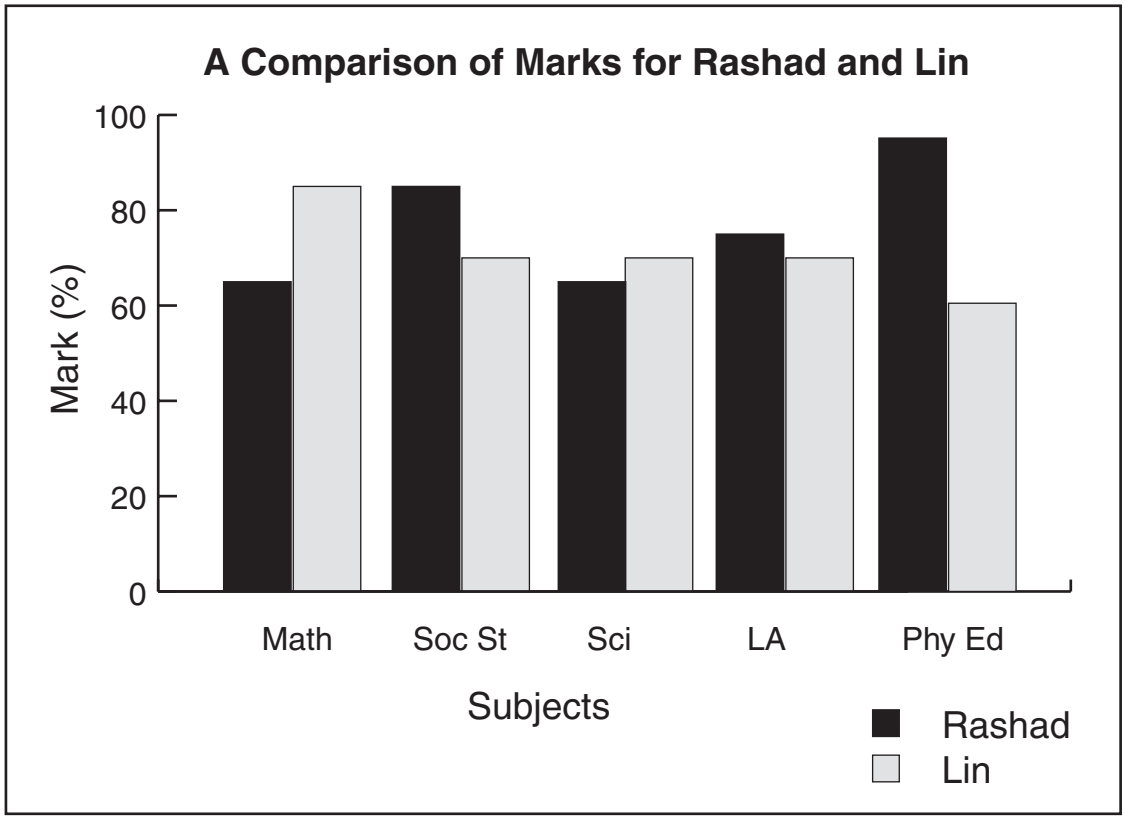
d. How many more hours are spent working each day than are spent doing homework? (Round your answer to the nearest hour.)

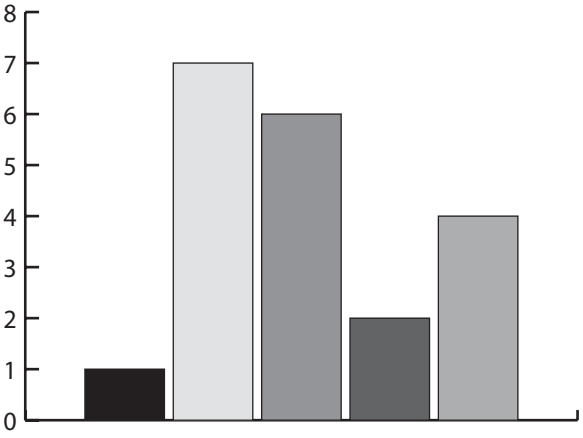
e. How many hours are spent each day on entertainment? (Round your answer to the nearest hour.)

Drawing Graphs

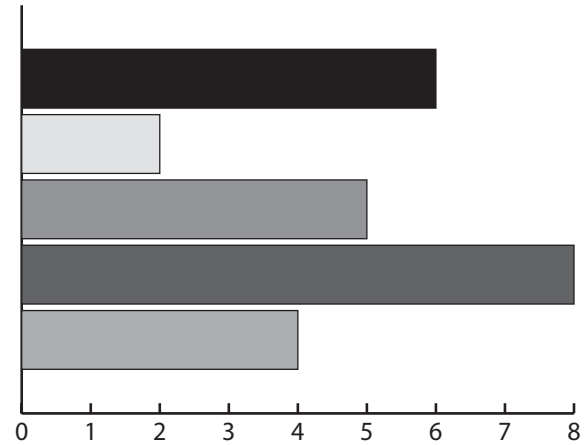
Below is a list of student marks and a double-bar graph. The graph shows the marks of Rashad and Lin. On the grid provided, draw a double-bar graph to show the marks of Sunna and Dave. Your graph should have a title, headings for the horizontal and vertical axes, and different coloured bars for different students.

Name	Math	Soc St	Phy Ed	Sci	LA
Rashad	65	85	95	65	75
Lin	85	70	60	70	70
Sunna	65	55	85	55	60
Dave	90	80	75	70	85





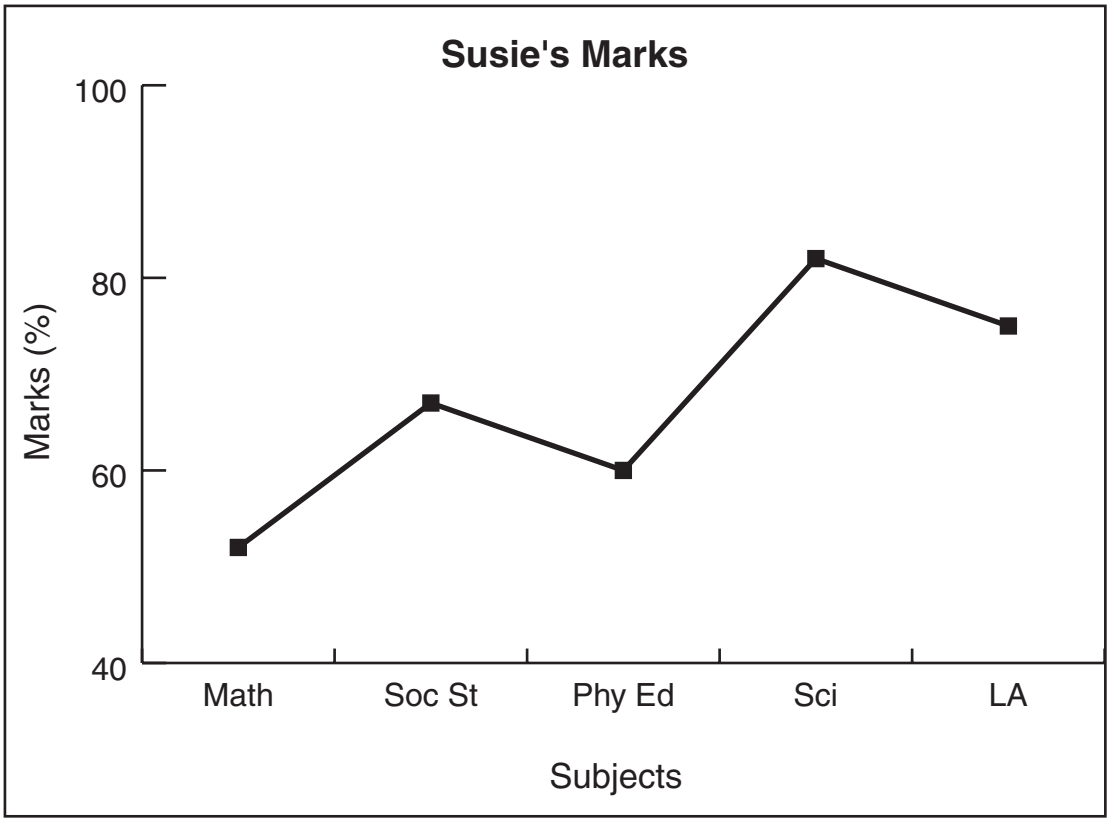
Vertical blinds
(vertical bars go up and down)

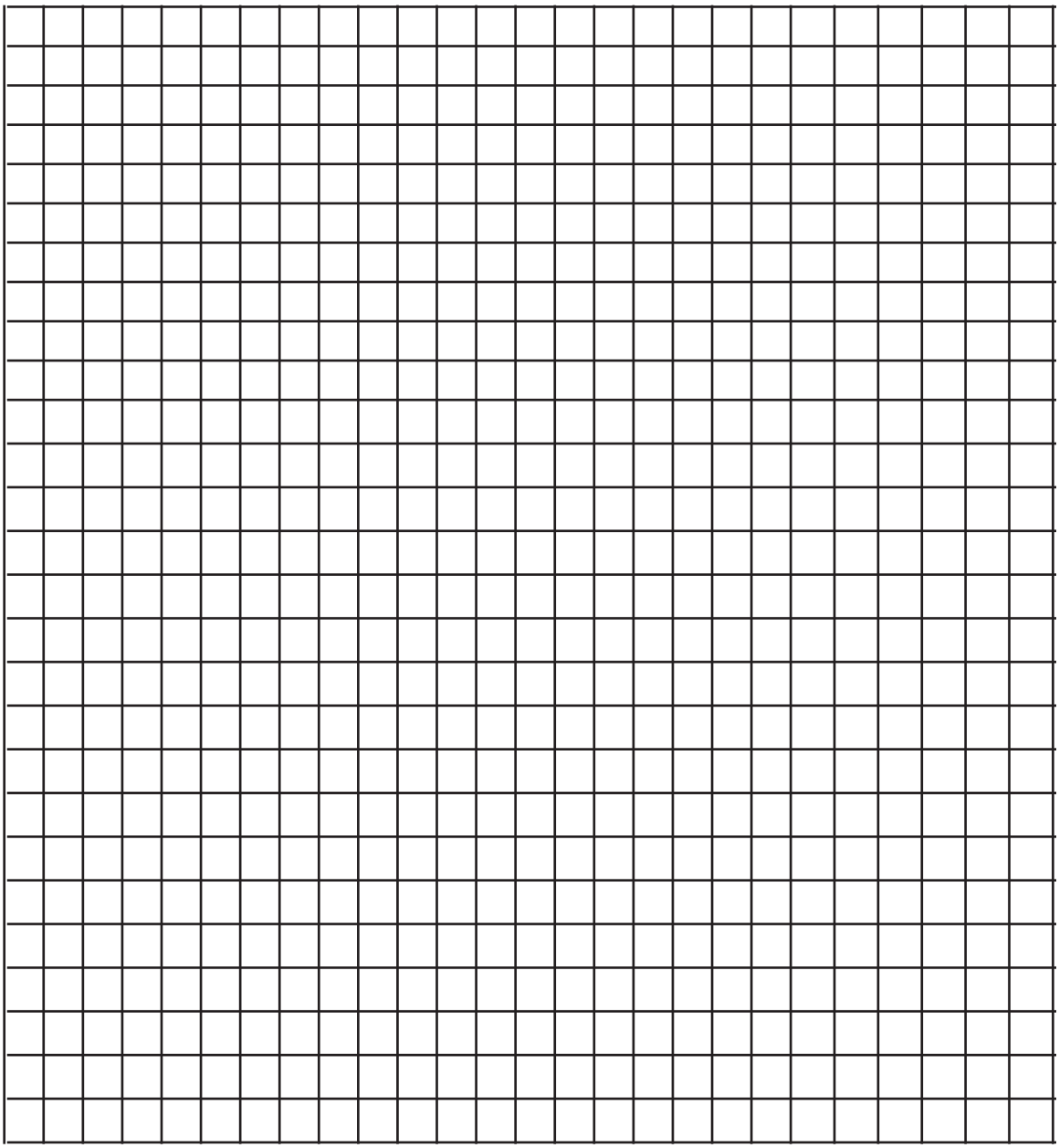


Horizontal fence line
(horizontal bars bars go across from left to right)

Below is a chart with the marks of four students. A line graph shows Susie's marks. On the grid provided on the next page, draw a triple-line graph to display the marks of Ben, Carol, and Freddy. Your graph should have a title, headings for the horizontal and vertical axes, and different coloured lines for each student.

Name	Math	Soc St	Phy Ed	Sci	LA
Susie	52	67	60	82	75
Ben	64	57	75	68	70
Carol	92	87	90	84	70
Freddy	83	73	85	69	85



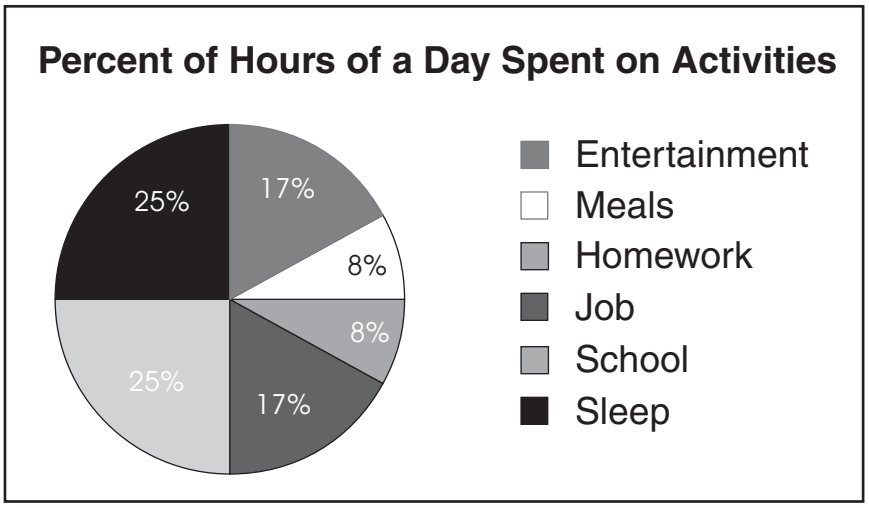


Draw a bar graph showing the information in the chart below. The title of the graph is "Students' Bank Accounts". Have the bars run **horizontally**. Your graph should have a title, headings for the horizontal and vertical axes, and different coloured bars for different students.

Roger	$ 525
Sally	$ 675
Charles	$ 1 050
Cherri	$ 475
George	$ 950

Drawing Circle Graphs

In a **circle graph**, each segment of the graph is displayed as a triangular piece of pie. A percent is written in or beside each piece of pie.



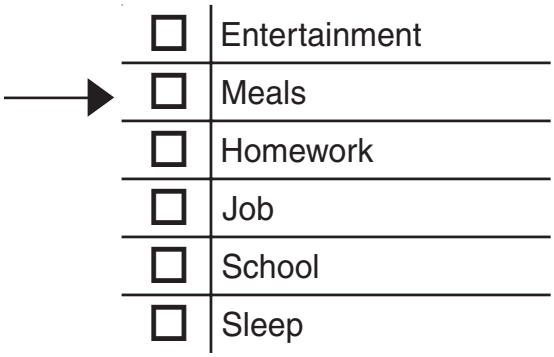
To draw a circle graph, calculate the number of degrees in each angle at the centre of the circle.

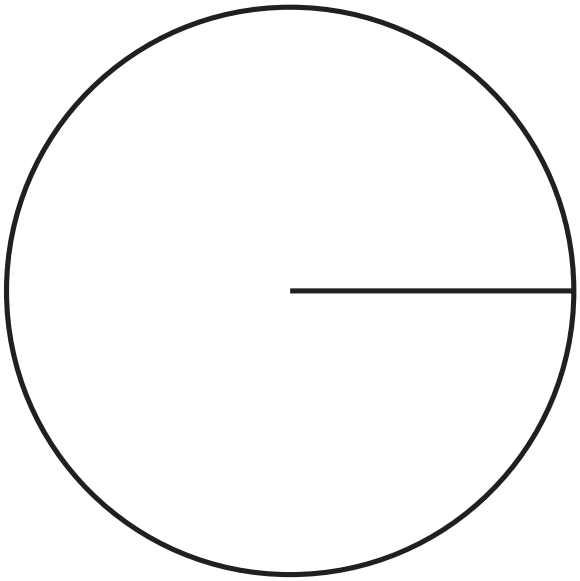
In this graph (Percent of Hours of a Day Spent on Activities), the sizes of the angles are as follows:

Activities	Percent	Number of Degrees
Sleep	25%	25% X 360 = 90°
School	25%	25% X 360 = 90°
Entertainment	17%	17% X 360 = 61°
Job	17%	17% X 360 = 61°
Homework	8%	8% X 360 = 29°
Meals	8%	8% X 360 = 29°
TOTALS:	100%	360°

Using your protractor and the blank circle below, draw a circle graph similar to the circle graph on the previous page. Give your graph a title and name each piece of pie. Colour each pie piece a different colour.

Colour coded



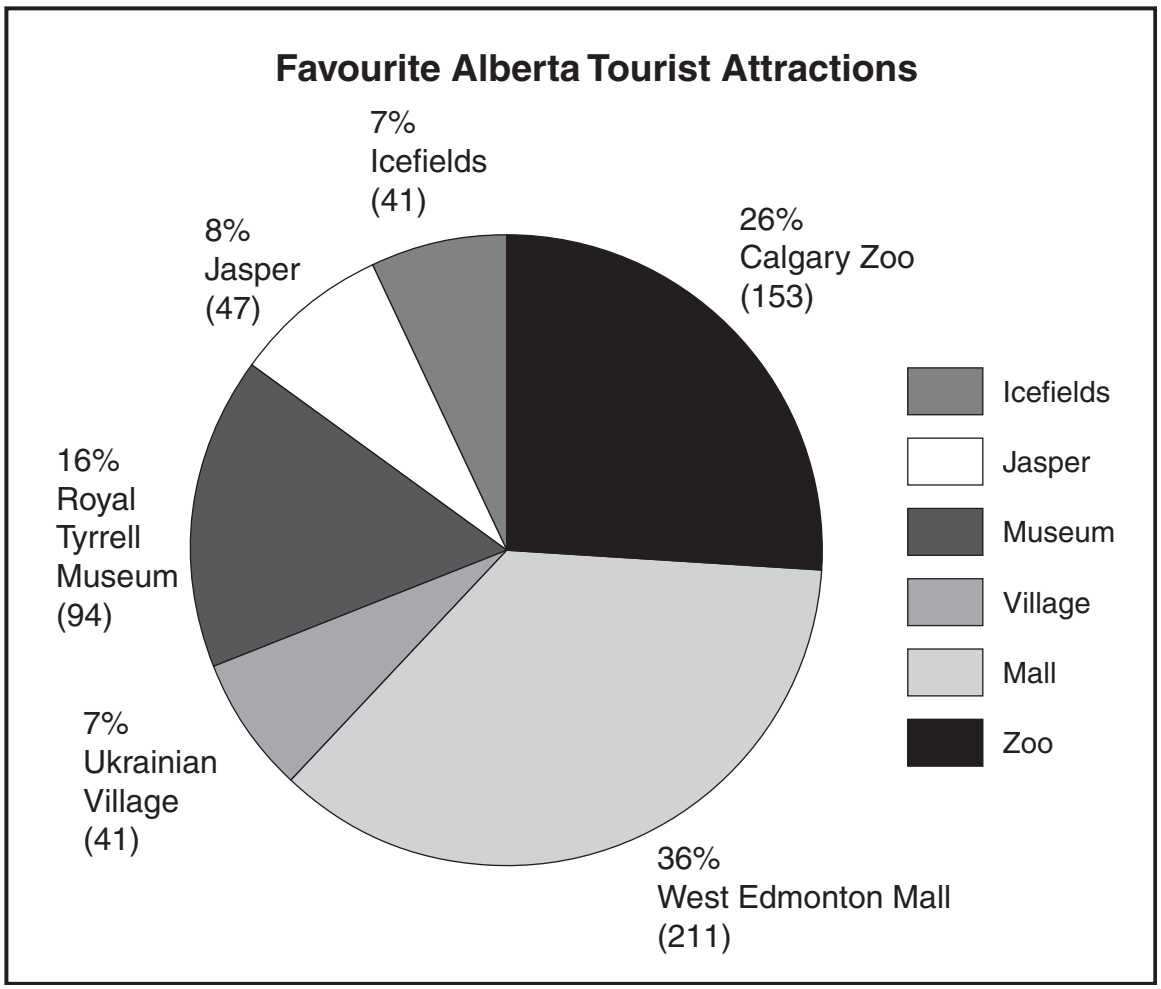


Five students (Jan, Karen, Alex, Henry, and Michael) were playing a board game entitled *Get the Money*. The object of the game was to get as much money as possible from the other players. Each player started the game with $20 000. The chart below shows how the game ended. Using your protractor and the circle, draw a circle graph showing the amount of money each player had at the end of the game. Give your graph a title and name each piece of pie. Colour each pie piece a different colour.

Name	$ at Start of Game	$ at End of Game	% of the Total Money at End of Game ($100 000)	Changing % Money Won to Degrees
Jan	$ 20 000	$ 22 000	22%	79°
Karen	$ 20 000	$ 13 000	13%	47°
Alex	$ 20 000	$ 45 000	45%	162°
Henry	$ 20 000	$ 14 000	14%	50°
Michael	$ 20 000	$ 6 000	6%	22°

Homework Assignment

1. This circle graph shows the favourite Alberta tourist attractions as chosen by Grade 6 students. The number in brackets shows how many votes each location received.



a. How many students were surveyed?

_____

b. How many more students chose West Edmonton Mall than the Calgary Zoo?

_____

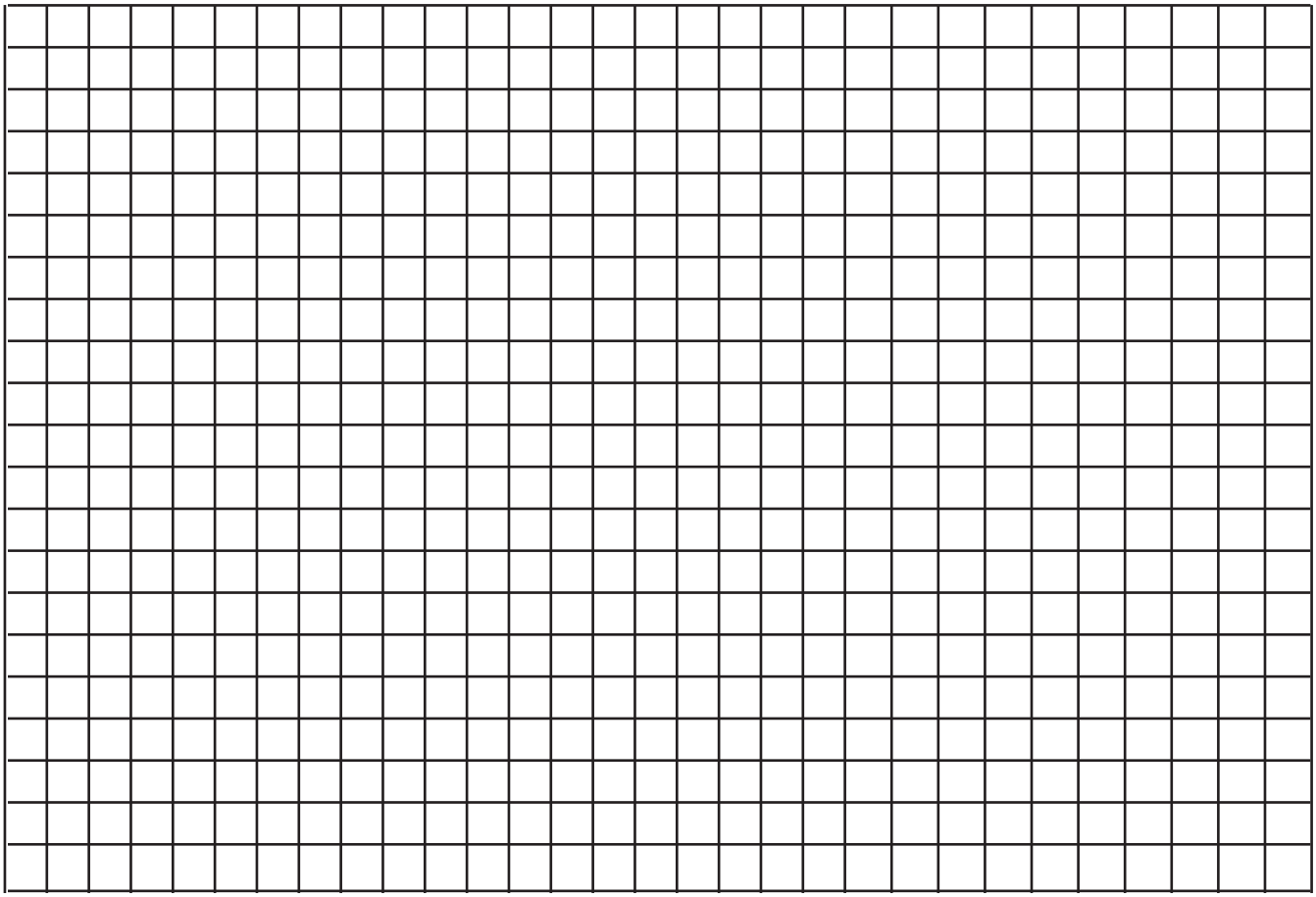
c. Altogether, how many students voted for the two smallest pies?

_____

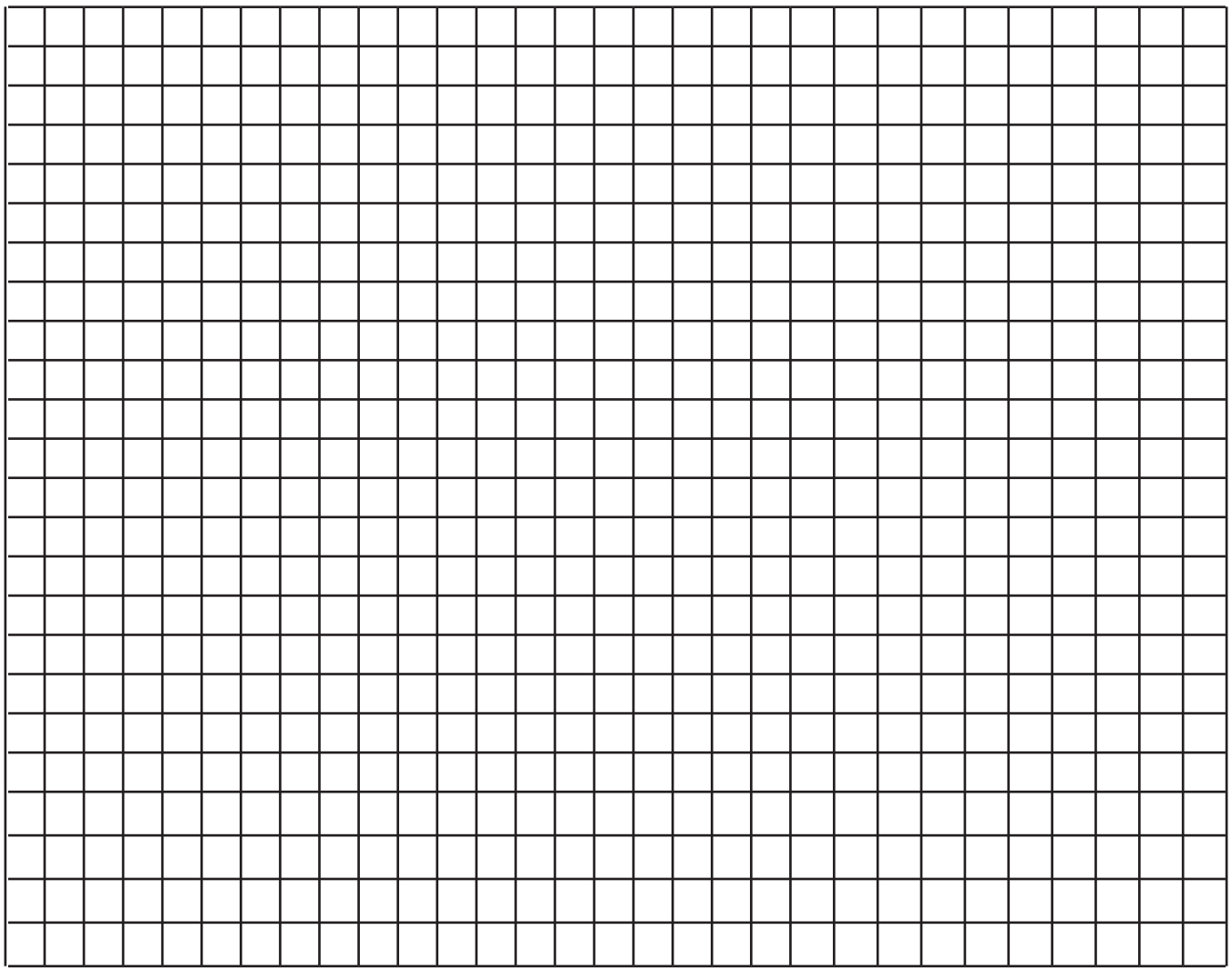
d. How many more students chose Royal Tyrrell Museum than Jasper National Park?

_____

2. Draw a bar graph (with the bars **horizontal**) showing the same information as the circle graph shown on the previous page (Favourite Alberta Tourist Attractions). Give your graph a title and name both the horizontal and vertical axis.



3. Draw a line graph showing the same information as the circle graph (Favourite Alberta Tourist Attractions). Give your graph a title and name both the horizontal and vertical axis.



Self-Evaluation

Ask yourself some important questions. Write your answers in sentences for your teacher.

1. In this lesson, what part of your work was **excellent**?

2. In this lesson, what part of your work **needs improvement**?

3. If you want help for some of the work in this lesson, ask your teacher in this space.