



Warm Up  
Date: Feb 12



Ch. 7 Lesson 4

Copy this out in your notebooks

Evaluate the Expressions:

B ~~A~~ DM AS

1.  $14 - 5 + 6 =$

2.  $5 \times 2 (4 + 4) =$

3.  $7 + 7 - 2 =$

$$\begin{aligned} 1) & \quad 14 - 5 + 6 \\ & \quad \underbrace{\phantom{14 - 5 + 6}} \\ & = 9 + 6 \\ & = 15 \end{aligned}$$

$$\begin{aligned} 2) & \quad 5 \times 2 (4 + 4) \\ & \quad \underbrace{\phantom{5 \times 2 (4 + 4)}} \\ & = 5 \times 2 (8) \\ & \quad \underbrace{\phantom{5 \times 2 (8)}} \\ & = 10 (8) \\ & = 80 \end{aligned}$$

*understood multiply* (pointing to the 2)

*multiply* (pointing to the 8)

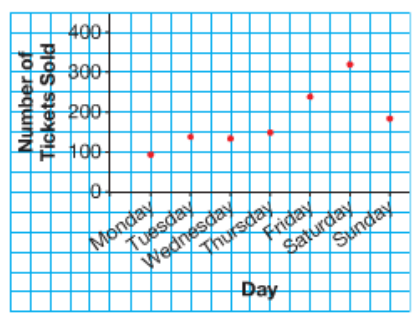
$$\begin{aligned} 3) & \quad 7 + 7 - 2 \\ & \quad \underbrace{\phantom{7 + 7 - 2}} \\ & = 14 - 2 \\ & = 12 \end{aligned}$$

**Practice** .....

# Homework Solutions

- For each graph below:
  - What is the title of the graph?
  - What does each axis show?
  - Why are the points not joined or joined?  
Are the data discrete or continuous?
  - What conclusions can you make from the graph?

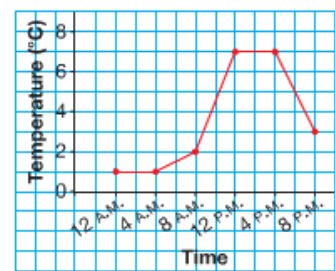
a) **Number of Tickets Sold at the Local Theatre Over 1 Week**



Title of graph is # of tickets sold at the local theater over 1 week

- Vertical axis shows number of tickets sold
- Horizontal axis show the days of week
- Points not joined since can't sell half of a ticket (discrete)
- Ticket sales are popular on the weekend

b) **Temperature in Whistler, BC, April 7, 2008**



Title of graph is Temp. in Windsor BC, Apr. 7, 2008

- Vertical axis shows temperature in Celsius
- Horizontal axis show the time the temp was measured
- Points are joined since you can have part of temp and time (continuous)
- Highest temp is between 12 and 4 pm

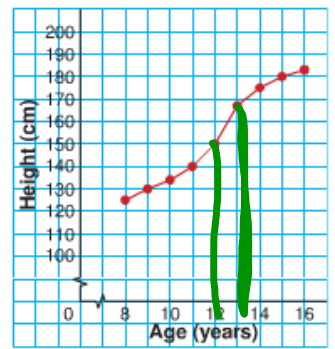
- Would you use a line graph or a series of points to display each set of data? Explain your choices.

- the temperature of a cup of boiling water as it cools line since can have part of temp
- the number of goals scored by Jarome Iginla over the last 10 weeks of the 2007-2008 season dots since can't have part of a goal
- the mass of a puppy in its first year line since can have part of mass
- the distance travelled by a cross-country skier as she completes the course line since can have part of distance

- What does this line graph show?  
Nathan's Growth in cm, from birth to age 16
  - About how tall was Nathan at each age?  
• 8 years 125 cm • 12 years 150 cm • 15 years 180 cm
  - During which year did Nathan grow the most?  
The least? How does the graph show this?  
12-13 steepest jump (or slope) so he grew the most  
15-16 least steep jump (or slope) so he grew the least

Why use a jagged line to indicate we are not showing all the numbers.

Nathan's Growth

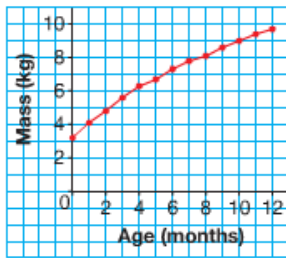


# Homework Solutions

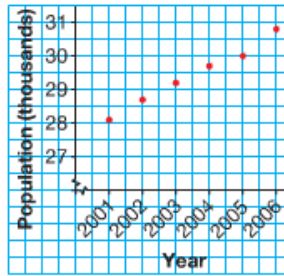


4. Look at the three graphs below.

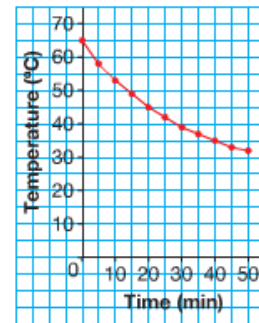
i) My Baby Sister's First Year



ii) Population of Nunavut, 2001–2006



iii) How My Hot Chocolate Cooled



- How are the graphs alike? How are they different?
- What conclusions can you make from each graph?

4. a) All the graphs show data that are changing over time. Each graph has labelled axes, and a title. The first and third graphs show continuous data (mass, time, and temperature), so the points are joined by line segments. The middle graph shows discrete data (numbers of people), so the points are not joined. The graphs use different scales.

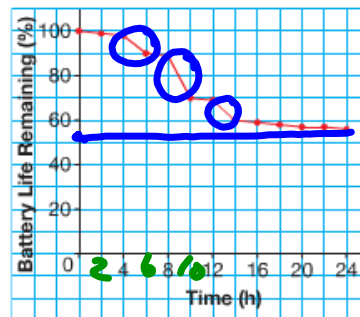
b) Baby Sister gained about 7 kg during her first year. Her rate of growth slowed down gradually over the 12 months. The population of Nunavut rose by about 3000 people between 2001 and 2006. The increase was steady, except for 2005 when the population growth was slower. The temperature of the hot chocolate dropped by about 33°C in 50 min. The temperature dropped gradually.



5. Marina measured the life left in her cell phone battery every two hours for 24 h. She used a line graph to display the data.

- What happened in the first 4 h?
- What happened between hours 4 and 6?
- How many times might Marina have used her cell phone? Explain.
- Between which two hours did Marina use her cell phone the most? How do you know?
- What percent of the battery life remained after 24 h?
- What other conclusions can you make from the graph?

My Cell Phone Battery

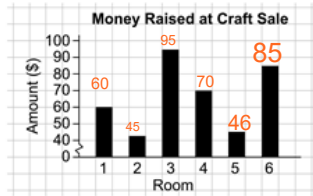


- The battery life stayed at about 100%.
- The battery life dropped by almost 10%.
- She might have used her cell phone 3 times. There are 3 places where the line segments go down steeply.
- The line segment goes down to the right and it has the steepest drop of all line segments. The battery life dropped about 20% during this time.
- The battery life stayed about the same between hours 6 and 8, so Marina probably didn't use her phone then.

# Homework Solutions

## Lesson 1: Interpreting Data

Kayla's school raised funds for charity. She graphed some of the data.



- Use the bar graph.
  - Which two rooms together raised about the same amount as Room 6?   
 Room 6 is about \$85 so Room 2 + Room 3 is 45 + 95 = 140
  - Suppose all the classrooms that took part in the Craft Sale are shown on the graph. About how much money was raised in all at the Craft Sale? Show your work.   
 60 + 45 + 95 + 70 + 46 + 85 = \$401

- In which month did the Bake Sale make the most money? Explain how you know.
  - Which two months raised the same amount of money?
  - How much money was raised from bake sales altogether?

2a) December since it is the highest dot on the line graph

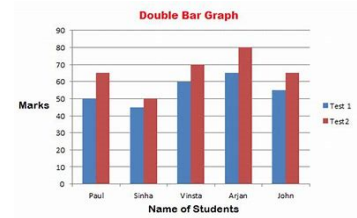
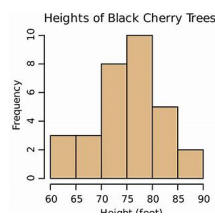
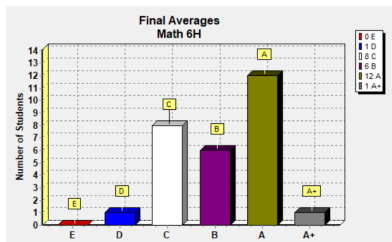
2b) October & March since they have the dots at the same height on the line graph (About \$31)

2c) 25 + 31 + 30 + 50 + 35 + 40 + 31 + 45 = \$287

## Lesson 3: Interpreting Graphs

- Would you use a line graph or a series of points to display each set of data? Explain your choices.
  - the volume of milk in a glass as it is filled  
line since can have part of volume
  - the number of games won by the Vancouver Canucks each month in the 2007–2008 regular season  
dots since you can't have part of a game won
  - the distance travelled by a mail carrier as she covers her route  
line since can have part of distance
- What does this line graph show?

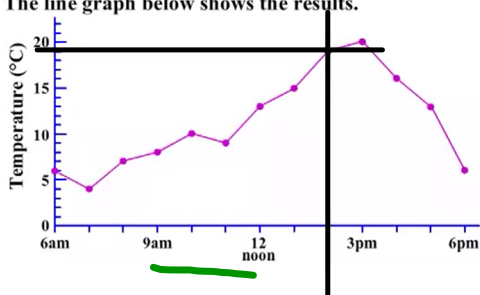
Grade 5 you did bar graphs, histograms, and double bar graphs



This year we will draw line graphs

LINE GRAPHS

On a school camp, Sebastian had the job of recording the temperature every hour from 6 am to 6 pm. The line graph below shows the results.



Do questions first then watch video

- a) What is the temperature at 9 am? 8°C
- b) What is the temperature at 4 pm? 16°C
- c) When did the temperature first reach 19°C? 2:00
- d) Estimate the temperature at 1:30 pm? 17°C
- e) Find the difference between the highest temperature and the lowest temperature. (range) 20°C

4°C

Big - Small  
 $20^{\circ}\text{C} - 4^{\circ}\text{C}$   
 $16^{\circ}\text{C}$

When drawing a line graph you need:

Study  
Title

- ↔ Horizontal axis for input (Label) Scale/Title
- ↓ Vertical axis for output (Label) Scale/Title
- Proper scale on each axis (this is the tricky part)



Nothing different from bar graphs yet

Instead of drawing a bar for the data, you put a dot at the height

-You may need to connect the dots depending if the data is continuous or discrete

**Connect**

Let's try

2004 Tsunami

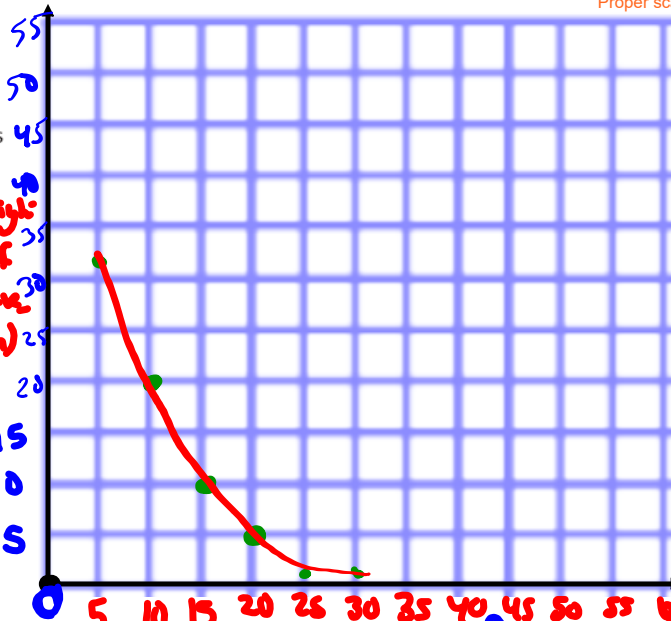
On December 26, 2004, a massive underwater earthquake rocked the coast of Indonesia's Sumatra Island. It caused a *tsunami*, or huge ocean waves.

► This table shows the height of the waves at different distances from land.

Distance from Land (km)	Height of Waves (m)
5	32
10	20
15	10
20	5
25	1
30	1

Hor ver

Height of waves (m)



Distance from Land (km)  
Input

Title  
Horizontal axis for input (Label)  
Vertical axis for output (Label)  
Proper scale on each axis (this is the tricky part)

Remember!

Scale of vertical is 1 block represent 5 m

Scale of horizontal is 1 block represent 5 km

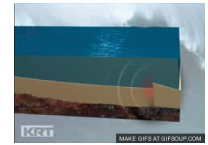
Since the line graph goes down to the right, we know that the farther the tsunami is from land, the smaller the waves

What do we know from the graph?



**Connect**

On December 26, 2004, a massive underwater earthquake rocked the coast of Indonesia's Sumatra Island. It caused a *tsunami*, or huge ocean waves.

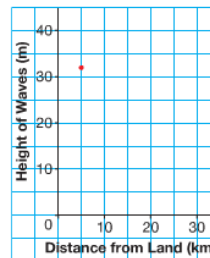


► This table shows the height of the waves at different distances from land.

Distance from Land (km)	Height of Waves (m)
5	32
10	20
15	10
20	5
25	1
30	1

To display these data:

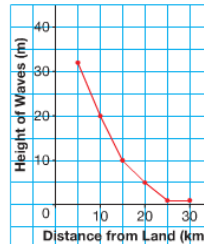
- Draw two axes.  
The horizontal axis shows *Distance from Land* in kilometres.  
The vertical axis shows *Height of Waves* in metres.
- Choose an appropriate scale.  
Count by 5s for the scale on the horizontal axis.  
The horizontal scale is 1 square represents 5 km.  
Count by 5s for the scale on the vertical axis.  
The vertical scale is 1 square represents 5 m.
- To mark a point for 5 km at 32:  
32 is  $\frac{2}{5}$  of the way between 30 and 35.  
So, on the vertical line through 5,  
mark a point  $\frac{2}{5}$  of the way between 30 and 35.



- Then mark points for the rest of the data in the same way.
- Both distance and height are continuous.  
So, use a ruler to join consecutive pairs of points, from left to right.
- Give the graph a title.

Since the line segments go down to the right, we know that the farther the tsunami is from land, the smaller the waves.

Height of Waves in a Tsunami



# Class/Homework

Page 265-266

Must do a neat job  
on grid paper

#1,

**Practice**

You will need grid paper.

1. Miners drill a hole in the earth's surface. They measure the temperature of the earth at intervals of 1 km. This table shows the data they collected.
  - a) Draw a graph to display these data.
  - b) Did you join the points? Explain.
  - c) Write 2 things you know from the graph.

Distance (km)	Temperature (°C)
0	20
1	29
2	41
3	48
4	59
5	67

2. The population of killer whales along the British Columbia coast is counted each year. The table shows the data for 2002 to 2006.
  - a) Draw a graph to display these data.
  - b) Explain how you chose the vertical scale.
  - c) Did you join the points? Explain.
  - d) What conclusions can you make from the graph?

Year	Number of Killer Whales
2002	81
2003	82
2004	86
2005	85
2006	87





3. This table shows how far Rene's family travelled on a car trip to Regina.
- a) Draw a line graph to display these data.
  - b) How did you choose the scale on the vertical axis?
  - c) What was the distance travelled each hour from hours 2 to 4? From hours 6 to 8?
  - d) What do you think was happening from hour 4 to hour 5 on the trip? Explain.
  - e) What other conclusions can you make from the graph?

Time Passed (h)	Distance Travelled (km)
1	80
2	180
3	280
4	380
5	380
6	480
7	530
8	580

4. Rajiv measures the length of his cucumber vine at 9:00 A.M. each day.

Day	1	2	3	4	5	6	7	8	9	10
Length of Vine (mm)	0	1	7	15	27	35	41	48	53	57

- Draw a graph to display these data.
- Did you join the points? Explain.
- Write 2 things you know from the graph.

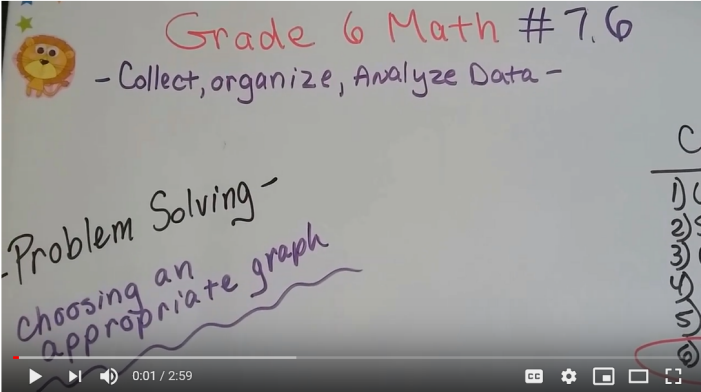
5. A ball is dropped from the top of a cliff. This table shows the distance travelled by the ball in the first 6 s.
- Draw a graph to display these data.
  - Did you join the points? Explain.
  - Write 2 things you know from the graph.

Time (s)	Distance (m)
0	0
1	5
2	20
3	45
4	80
5	125
6	180

6. This table shows the Aboriginal population in Canada from 1971 to 2001.

<b>Year</b>	1971	1981	1991	2001
<b>Population (in thousands)</b>	313	491	1003	1320

- Draw a graph to display these data.
- Explain how you chose the scale on each axis.
- Did you join the points? Explain.
- What do you know from looking at the graph?



Grade 6 Math #7.6, Problem Solving - Choosing the right Graph