B: Interpreting Graphs

Given a linear relation in graph form you must be able to:

1. Interpolate values
   ↳ find values between known values.
2. Extrapolate values
   ↳ find values outside of the given values.

★ Use dotted lines to represent Interpolation & Extrapolation!

★ You can only interpolate/extrapolate if it is "okay" to have values inbetween values.

• Use Worksheet 6.2 in order
   to complete the following examples.
   Then finish Page 226 #4 - 11.

Date: _____

6.2 Interpreting Graphs

*MathLinks 9*, pages 220–230

Use for Examples.

Key Ideas Review

For #1, unscramble the letters to form a word that correctly completes the sentence.

1. a) When values are found on a graph within a known range of values, this is

   called ___interpolation___ .
   LTNNPTIEOOARI

   b) To find a value on a graph that is beyond the known range of values on a graph

   is called ___extrapolation.___
   PNALARXETITOO

   c) On the graph to the right, find the value that

   corresponds with 3.5 h worked. This practice is called

   _____ because the values are found
   LTNNPTIEOOARI

   _____ known values in a set.
   NETEBEW
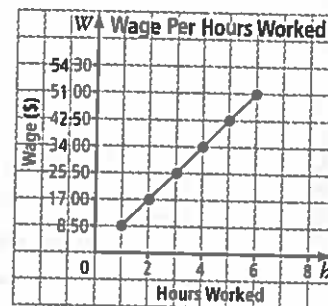
   d) On the same graph, find the value that corresponds with 10 h worked. This

   practice is called _____ because the values are found
   PNALARXETITOO

   _____ the known range of values.
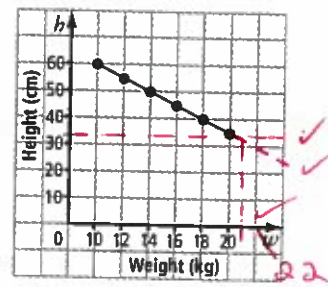   ENDYOB

Check Your Understanding

2. Is it reasonable to interpolate and extrapolate values from the graph? Explain.
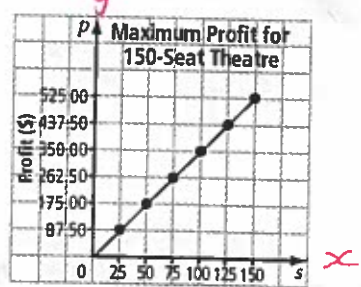
- It is reasonable to interpolate but only for whole numbers.

- It is unreasonable to extrapolate because no values exist outside the given values.

3. The graph shows a relationship between weight and height jumped.
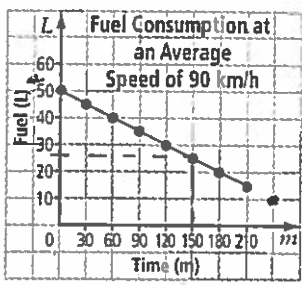

What is the approximate value of the w-coordinate when $h = 32$ cm? Which method did you use to determine the answer?

When $h = 32$; $w \approx 21$ kg.
Extrapolation. ✓

Pg. 4-18

4. The following graph shows fuel consumption over time.

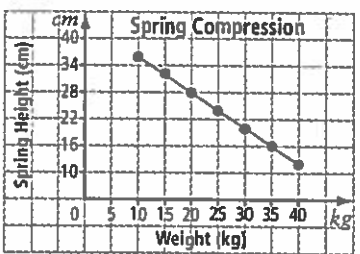*225 km / 90 km/h*

2.5 h × 60 = 150 min

a) Is it reasonable to extrapolate data from this graph? Explain.

Yes but only in the positive "x" direction.

b) Approximately how much fuel has been used to travel 225 km?

L = 26 l (left) 50 − 26 = ≈24 L

5. A spring is compressed after weights are placed on it. The spring fully compressed is 12 cm long and fully extended is 40 cm long.
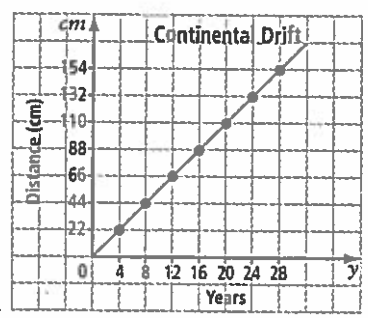

a) Is it reasonable to extrapolate data from this graph? Explain.

b) What weight fully compresses the spring?

c) When a 25-kg weight is placed on the spring, what is the spring's length?

6. Continental drift occurs at a rate of about 1 cm to 10 cm per year. Assuming an average movement of 5.5 cm per year, use the graph to answer the following questions.


a) Approximately how long will it take the plate to move 2 m?

b) After 17 years, approximately how far will the plate have moved? Which method did you use to determine your answer?

7. The table of values represents the dosage of a medicine needed by body weight. *★ "y" depends on "x"*

Weight, kg	18	32	46	60
Dosage, mg	60	75	90	105

a) Plot the linear relation on a graph.
The relationship between weight : dosage
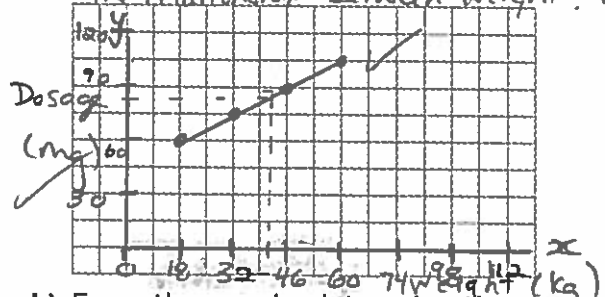
b) From the graph, determine the approximate dosage needed for weights of 40 kg and 100 kg.
40 kg ≈ 82 mg

c) From the graph, determine the approximate weights needed for dosages of 50 mg and 120 mg.