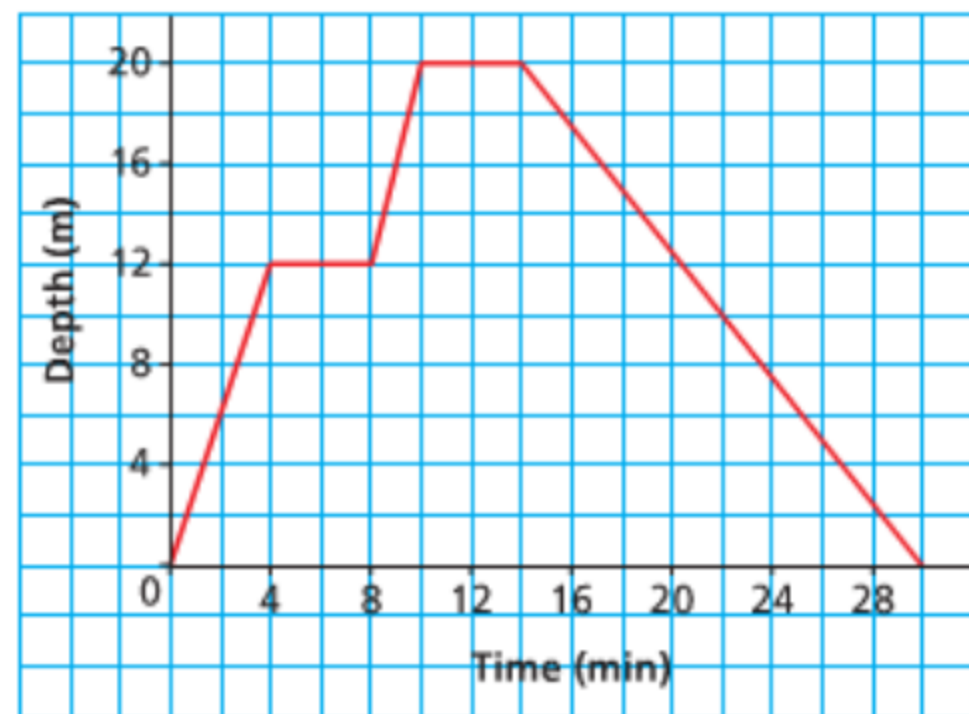


## Interpreting & Sketching Graphs of Relations

In math, a graph provides much information.

This graph shows the depth of a scuba diver as a function of time.

A Scuba Diver's Dive



How many minutes did the dive last? 30 min

At what times did the diver stop her descent? 4-8 min and 10-14 min

What was the greatest depth the diver reached? For how many minutes was the diver at that depth? 20m for 4 min

### Example 1:

Each point on this graph represents a bag of popping corn.  
Explain the answer to each question below.

- a) Which bag is the most expensive?

What does it cost?  $C \rightarrow \$7$

- b) Which bag has the least mass?

What is this mass?  $B \rightarrow 500\text{g}$

- c) Which bags have the same mass?

What is this mass?  $D$  and  $E$   
 $1800\text{g}$

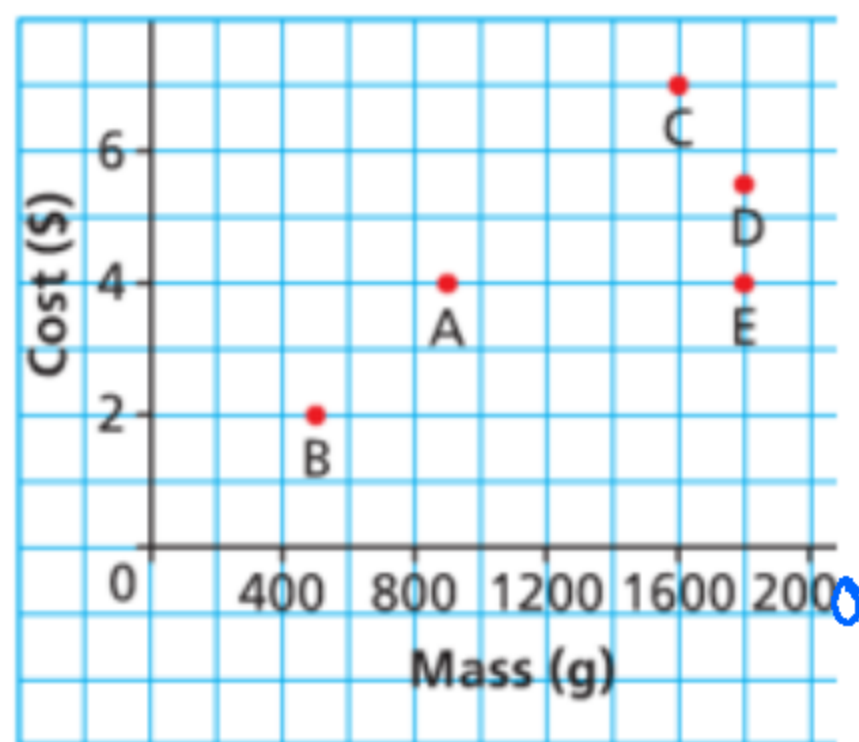
- d) Which bags cost the same?

What is this cost?  $A$  and  $E$   
 $\$4$

- e) Which of bags C or D has the better value for money?

$\rightarrow$  D is better; it has more mass and costs less than C.

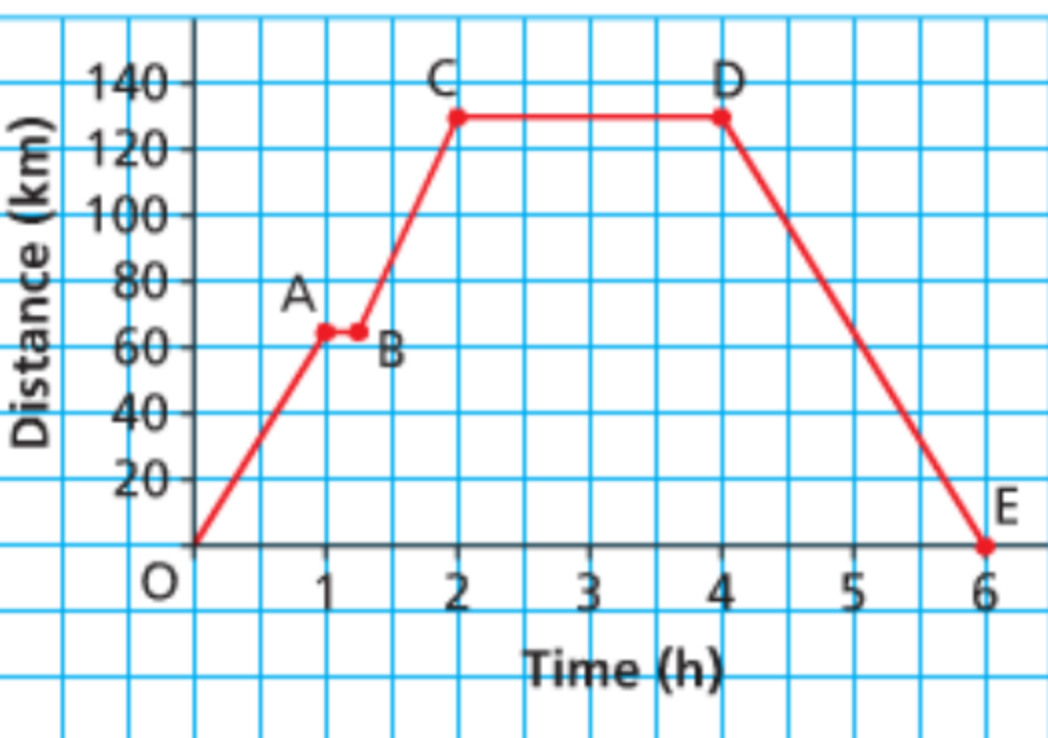
Costs and Masses of Various Bag of Popcorn



Example 2:

Describe the journey for each segment of the graph.

Day Trip from Winnipeg to Winkler, Manitoba



The distance between  
Winnipeg and Winkler  
is 130 km.

O-A : Driving at 65 km/h

AB : Stop at Syl's for 15 min.

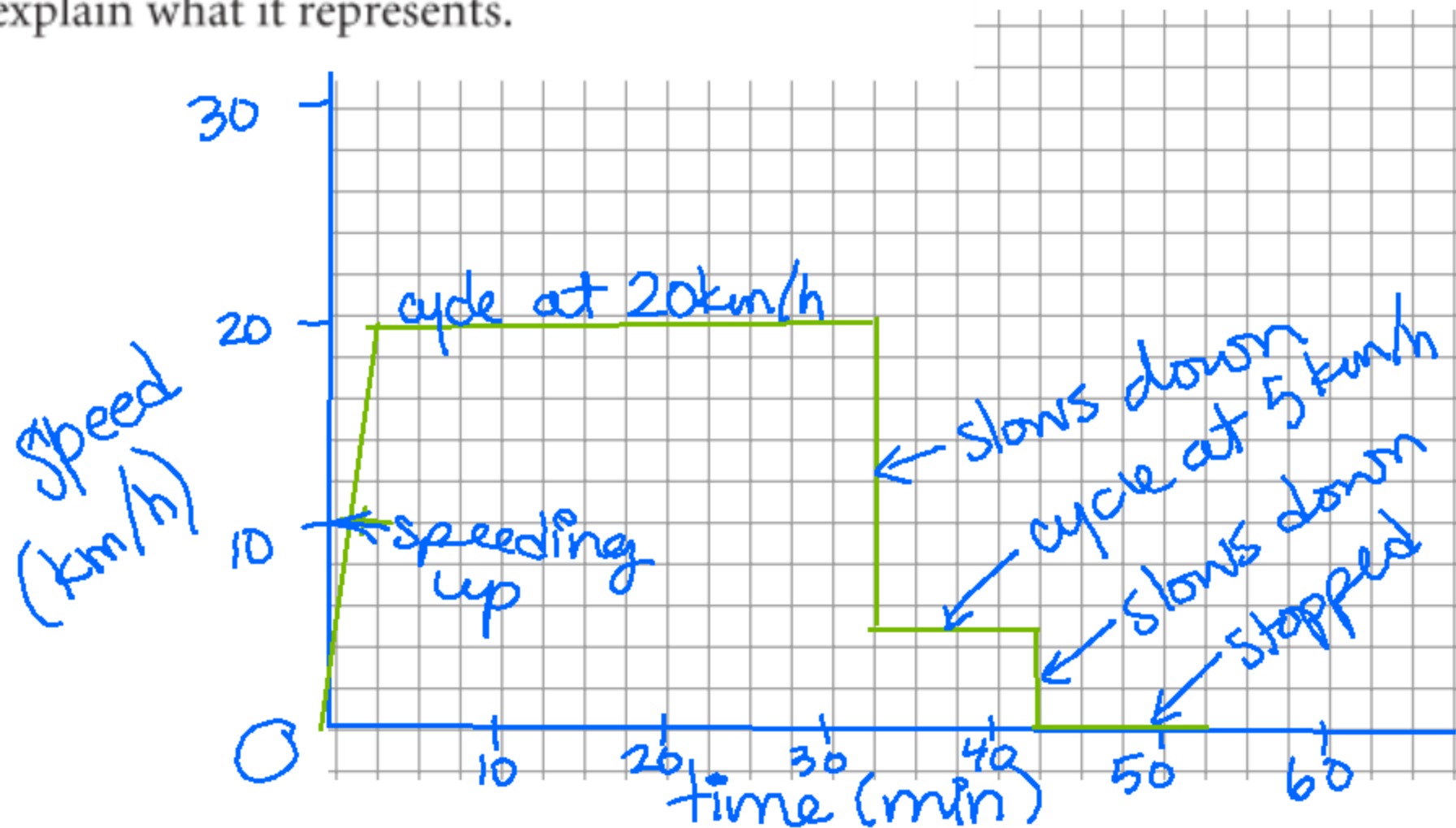
BC : Continue driving to  
Winkler 43 km/h

CD : Stopped at Superstore  
in Winkler for 2 hours

DE : Drive back to Wpg.  
at 65 km/h

Samuel went on a bicycle ride. He accelerated until he reached a speed of 20 km/h, then he cycled for 30 min at approximately 20 km/h. Samuel arrived at the bottom of a hill, and his speed decreased to approximately 5 km/h for 10 min as he cycled up the hill. He stopped at the top of the hill for 10 min.

Sketch a graph of speed as a function of time. Label each section of the graph, and explain what it represents.



\* scale is consistent

\* ruler

\* label scale

\* include title and units for axes

Homework

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# 3, 5, 10, 11, 18