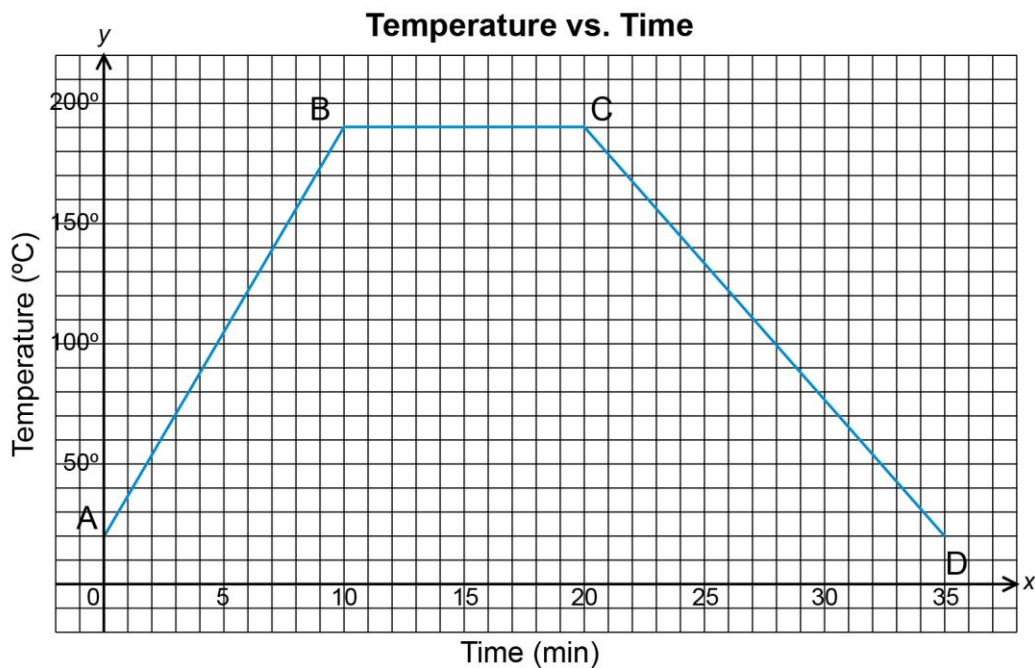


TT 16. *Foundations and Pre-calculus Mathematics 10* (Pearson), questions 3, 5, 6, 10, 13 and 14 on pages 281 to 283 **Possible Solutions**

3. a) Bear F has the greatest mass with a mass of approximately 640 kg. **Note:** Other acceptable estimations are between 620 kg and 650 kg.
3. b) Bear A is the shortest with a height of about 0.7 m. **Note:** Other acceptable estimations are between 0.6 m and 0.8 m.
3. c) The two bears that have the same mass are Bear D and Bear E, with a mass of 400 kg.
3. d) The two bears that have the same height are Bear D and Bear H, with a height of about 2.25 m. **Note:** Other acceptable estimations are between 2.2 m and 2.3 m.
5. Graph B best represents this situation. She pulls the rope steadily, which is represented by the diagonal lines going up to the right. Then when she moves her hands up, there is a slight pause, which is represented by the straight horizontal lines.
6. The following describes each segment:
 - segment START to A: Gill is running away from her house at a constant speed of 1 km in 5 min. (The graph goes up and to the right, so as time increases so does distance.)
 - segment A to B: Gill is either stopped for a rest or she is running at the same distance from her house, which is 1.0 m from her house for 5 min. (The graph is horizontal, so as time increases, distance from her house stays the same.)
 - segment B to C: Gill is running away from her house at a constant speed of 1.0 km in 10 min. (The graph goes up and to the right; therefore, as time increases, so does distance at the same rate.)
 - segment C to D: Gill is running back to her house at a constant speed for 10 min. (The graph goes down and to the right; therefore, as time increases, distance decreases.)

10. The student's sketch should look similar to the following.



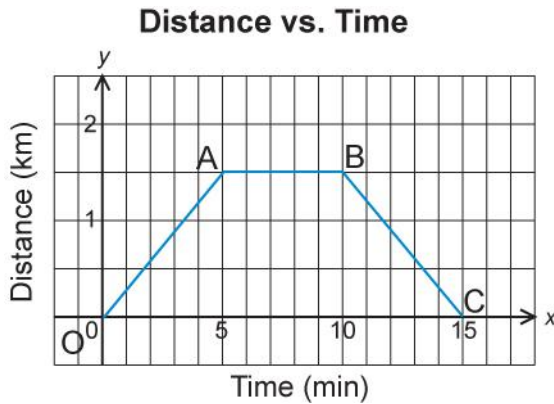
The following is an explanation of what each section of the graph represents:

- A to B: This section shows a straight line up and to the right. So as time increases, the temperature increases. The oven warms up. In the first 10 min, the temperature rises from 20°C to 190°C.
- B to C: This section shows a horizontal line. So as time increases, the temperature stays the same. The temperature stays at 190°C for 10 min.
- C to D: This section shows a straight line down and to the right. So as time increases, the temperature decreases. In 15 min, the temperature drops from 190°C to 20°C. In other words, the oven cools down to room temperature.

13. Errors in the graph include the following:

- When Jonah's mom enters the room to ask a question, Jonah turns the television down and then up—not up and then down as the graph displays.
- When Jonah mutes the television, the graph should instantly drop to zero—not gradually decrease to zero over 1 min.

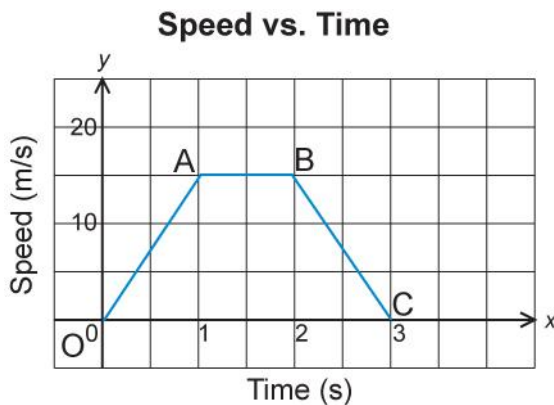
14. a) The student could label the graph as follows.



Answers will vary, but the graph could represent a person going to the store to pick up some milk.

- O to A: This segment represents the drive to a grocery store (about 1.5 km from home) at a constant speed for 5 min.
- A to B: This segment represents the person going into the store to buy some milk. The person has stopped for about 5 min.
- B to C: This segment represents the person heading home 1.5 km from the store at a constant speed for 5 min.

14. b) The student could label the graph as follows.



Answers will vary, but the graph could represent a person driving in the city.

- O to A: This segment represents the person accelerating for 1 s, reaching a speed of 15 m/s. The line going upwards and to the right represents an increase of speed at a constant rate.
- A to B: This segment represents the person driving 15 m/s for 1 s. The horizontal line represents constant speed.

- B to C: This segment represents a person seeing a red light and slowing down until the vehicle gets to the red light and comes to a stop. The line angled down and to the right represents deceleration.