Graphs (Junior science for year 8)

1. A student investigated how the temperature of water affects the time it takes for a sugar cube to dissolve. The student dissolved one sugar cube in 100 mL of water at different temperatures whilst stirring each solution at a constant rate. The time taken for each sugar cube to fully dissolve is recorded and graphed.

   The data collected is shown on the right in table form

Temperature (°C)	Time to Dissolve (s)
20	142
25	115
30	93
35	76
40	62
45	51
50	43
55	37
60	32

   a. Identify the :
   - dependent variable

_____

   - independent variable

_____

   b. Plot the data on a graph, use the graph paper on the back of this sheet.

   c. Describe the trend shown in the graph.

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d. Explain why increasing the temperature affects the time it takes for the sugar cube to dissolve.
Refer to particle theory in your answer.

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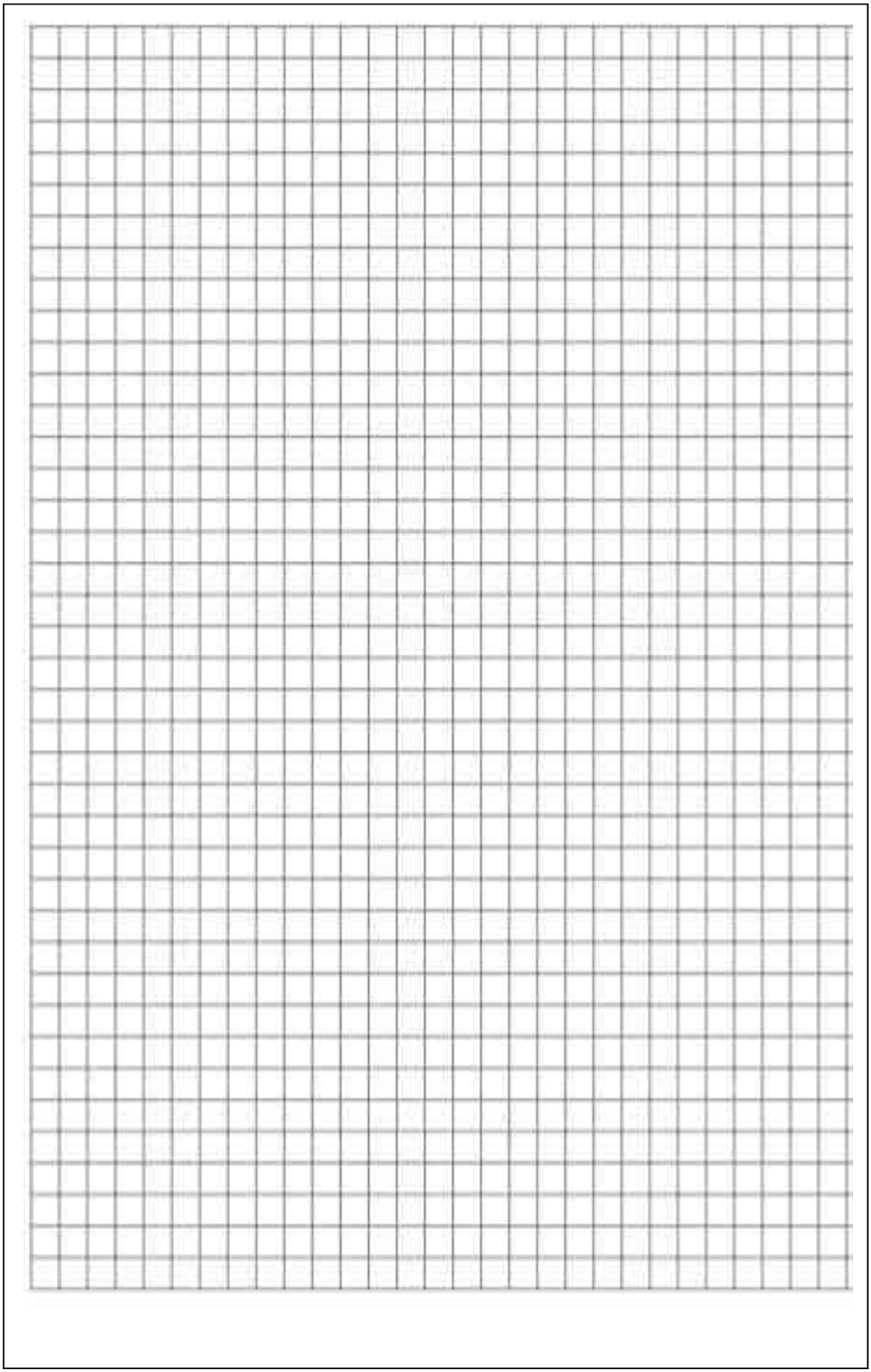

2. A patient is injected with a radioactive enzyme to monitor how the kidneys perform in removing this chemical from the body.
   The radioactive enzyme is measured every 5 minutes for 25 minutes.

   The results are shown on the right.

a. Graph the data on suitable set of axes and draw a line of best fit. Use the graph paper over the page.

b. Extrapolate the graph to see what the enzyme activity is after 30 minutes.

   _____

c. What is the enzyme activity predicted to be after 12 minutes.

   _____

Time (minutes)	Enzyme Activity (units)
0	100
5	80
10	64
15	35
20	23
25	8