

Name \_\_\_\_\_  
Period \_\_\_\_\_ Date \_\_\_\_\_

## THE GREAT RACE

Four teams entered a race that involved running, canoeing, biking and cross country skiing. The table shows the times it took each team to complete each section of the race. Answer the following questions about the race. Show all your work.

<b>Team 1</b>		
<b>Section</b>	<b>Time</b>	<b>Distance</b>
Running	15 min.	1 km
Canoeing	45 min.	2 km
Biking	60 min.	10 km
Skiing	25 min	1 km

<b>Team 2</b>		
<b>Section</b>	<b>Time</b>	<b>Distance</b>
Running	12 min.	1 km
Canoeing	35 min.	2 km
Biking	35 min.	10 km
Skiing	20 min	1 km

<b>Team 3</b>		
<b>Section</b>	<b>Time</b>	<b>Distance</b>
Running	20 min	1 km
Canoeing	48 min.	2 km
Biking	30 min.	10 km
Skiing	45 min	1 km

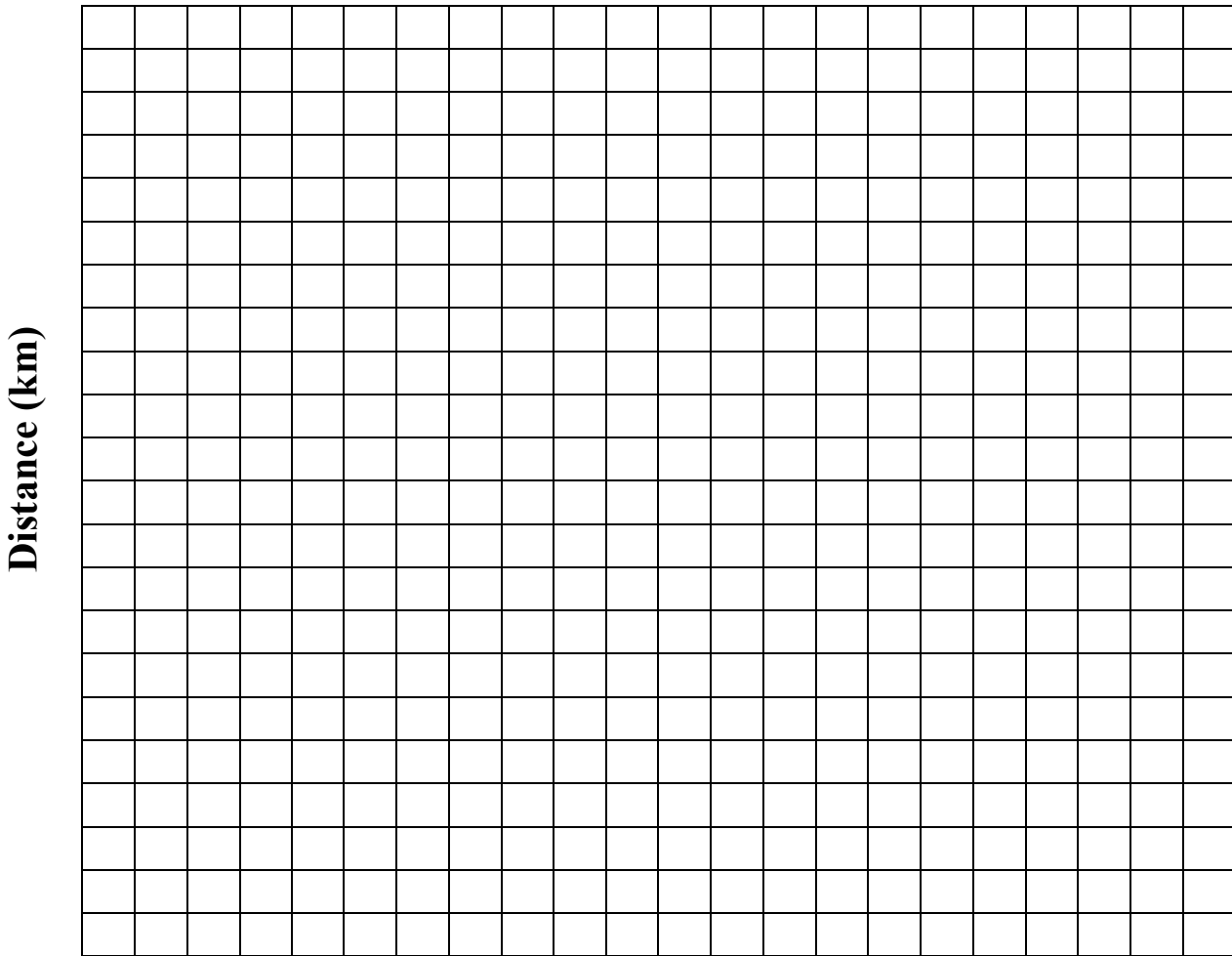
<b>Team 4</b>		
<b>Section</b>	<b>Time</b>	<b>Distance</b>
Running	21 min.	1 km
Canoeing	50 min.	2 km
Biking	45 min.	10 km
Skiing	32 min.	1 km

1. What was each team's average speed? Who was the fastest?
2. Which team had the fastest skiing speed? The slowest biking speed?
3. Who won the race?

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1. On the graph below plot the different speeds that Team 3 had for each section of the race.
2. According to the graph, list the sections of the race for Team 3 from fastest to slowest. Explain how you can tell this from just looking at the graph. Also fill in any missing information on the graph.



**Time (min)**

## Answer Key

### Page 1:

1. For Team 1:  $v = \frac{1km + 2km + 10km + 1km}{15\text{ min} + 45\text{ min} + 60\text{ min} + 25\text{ min}} = \frac{14km}{145\text{ min}} = .097 \frac{km}{\text{min}}$

**For Team 2:**  $v = \frac{1km + 2km + 10km + 1km}{12\text{ min} + 35\text{ min} + 35\text{ min} + 20\text{ min}} = \frac{14km}{102\text{ min}} = .137 \frac{km}{\text{min}}$

For Team 3:  $v = \frac{1km + 2km + 10km + 1km}{20\text{ min} + 48\text{ min} + 30\text{ min} + 45\text{ min}} = \frac{14km}{143\text{ min}} = .098 \frac{km}{\text{min}}$

For Team 4:  $v = \frac{1km + 2km + 10km + 1km}{21\text{ min} + 50\text{ min} + 45\text{ min} + 32\text{ min}} = \frac{14km}{148\text{ min}} = .095 \frac{km}{\text{min}}$

Team 2 had the fastest average speed.

2. For Skiing:

For Team 1:  $v = \frac{1km}{25\text{ min}} = .04 \frac{km}{\text{min}}$

**For Team 2:**  $v = \frac{1km}{20\text{ min}} = .05 \frac{km}{\text{min}}$

For Team 3:  $v = \frac{1km}{45\text{ min}} = .02 \frac{km}{\text{min}}$

For Team 4:  $v = \frac{1km}{32\text{ min}} = .03 \frac{km}{\text{min}}$

Team 2 had the fastest skiing speed.

For Biking:

**For Team 1:**  $v = \frac{10km}{60min} = .17 \frac{km}{min}$

For Team 2:  $v = \frac{10km}{35min} = .29 \frac{km}{min}$

For Team 3:  $v = \frac{10km}{30min} = .33 \frac{km}{min}$

For Team 4:  $v = \frac{10km}{45min} = .22 \frac{km}{min}$

Team1 had the slowest biking speed.

3. Team 2 won the race. This can either be determined by Team 2 having the fastest average speed or totaling their times and determining they had the least total time.

## Page 2

1. Each section of the race should be plotted with a label indicating the proper sections, for a total of 4 lines.
2. In order of fastest to slowest:

Biking – Running – Canoeing – Skiing

Looking at the graph one see the different slopes. A steeper slope implies a faster speed since this means a further distance in the same amount of time.

Also a title should be added to the graph to fill in any missing information as instructed.