## AQA, OCR, Edexcel GCSE

## GCSE Maths

## Distance-Time Graphs

## Name:

## M M E <br> Mathsmadeeasy.co.uk



## Guidance

1. Read each question carefully.
2. Don't spend too long on each question.
3. Attempt every question.
4. Always show your workings.

Revise GCSE Maths: www.MathsMadeEasy.co.uk/gcse-maths-revision/

Visit http://www.mathsmadeeasy.co.uk/ for more fantastic resources.

1. Here is a distance-time graph for Charlie's day-long journey. In the description below, fill in the missing data.


Charlie leaves home at 09:00 and then stops for breakfast miles from home. After his long breakfast, he walks to the shops at an average speed of ...... mph, arriving at 13:00. He then walks towards home until 15:00, and then to the library, arriving at 17:00, having walked ...... miles since leaving the shops. He then returns home at a constant speed, arriving at ... : ...

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2. Katherine and Julia both race to the shops, both arriving at 17:00. Their distances from home are displayed in the chart below.


Who covered the longest distance on their journey to the shops? Give your reasoning.
$\qquad$
$\qquad$

What was Katherines highest speed over the course of the journey?
$\qquad$

How much time did Julia spend ahead of Katherine in the race?
$\qquad$
$\qquad$

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3. On a morning bike ride Jane records her distance from her usual start point in 20 -minute intervals. This can be seen on the graph below.


How far did she travel over the whole journey?
$\qquad$
On another day she completes each 20-minute leg of the journey in 30 minutes instead. What is her new average speed over the whole journey?
$\qquad$
$\qquad$
If she travels back to the start at an average speed of $2.5 \mathrm{~km} / \mathrm{hr}$, at what time does she arrive?
$\qquad$
$\qquad$

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4. The diagram below shows a journey starting from home.


Describe the journey. Split the journey up into two steps; outward and return. Make note of:

- the highest speed achieved
- any rest times
- the total distance covered
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$
$\qquad$

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5. On the diagram below, draw a distance-time graph to represent the following journey.

- Raine starts 4 miles from home and walks away from home at 3 mph for 20 minutes.
- She then runs away from home for 3 miles, taking 15 minutes.
- She rests for 10 minutes
- She then takes the bus to the shops, 16 miles away from home at an average speed of 32 mph .
- After shopping for 5 minutes, she returns home at an average speed of 48 mph .


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6. Complete the graph below to show a 9-mile race between two people, Jenny and Owen.

- They both start the race at the same time
- Owen runs at 6 mph for 20 minutes, then rests for 5 minutes, runs 6 miles in 45 minutes. He then runs to finish the race after 80 minutes total.
- Jenny runs at 12 mph for 30 minutes, but then rests for 20 minutes after that. She then runs the remaining distance in 20 minutes.

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Do Jenny and Owen ever meet at any point during the race?
$\qquad$
When Jenny completes the race, approximately how far does Owen have left to run?
$\qquad$

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7. There are eight graphs below. Sort them into the table based on their characteristics. If a graph satisfies multiple areas of the table, write it in both.

| A | B | C | D |
| :---: | :---: | :---: | :---: |
|  |  |  |  |
| $E$ | F | G | H |
|  |  |  |  |


|  | Rests | Does not rest |
| :---: | :--- | :--- |
| Travels in <br> only one <br> direction |  |  |
| Travels in <br> multiple <br> directions |  |  |
| Starts and <br> ends at the <br> same place |  |  |

