



FUNCTIONAL SKILLS MATHEMATICS

AQA | Edexcel | City & Guilds | Open Awards | NCFE | Highfield

Level 2

Speed

Materials

- You **cannot** use a calculator for **questions** with this symbol.



Instructions

- Answer **all** questions.
- Answer questions on separate paper.

Information and Advice

- The marks for each question are shown in brackets – use this as a guide on how long to spend on each question.
- Read each question carefully before you answer it.
- Check you answers.

Q1 Find the speed of travel in each of these cases.

1(a) 100 m in 50 s. **[2 marks]**

1(b) 1000 m in 125 s **[2 marks]**

1(c) 20 km in 1 hr **[2 marks]**

1(d) 35 km in $\frac{1}{2}$ hr **[2 marks]**

1(e) 504 m in 16 s **[2 marks]**

1(f) 27 m in 4.5 s **[2 marks]**

1(g) 130 m in 520 s **[2 marks]**

1(h) 600 mi in 20 hr **[2 marks]**

1(i) 45 mi in 1.5 hr **[2 marks]**

1(j) 100 mi in $2\frac{1}{2}$ hr. **[2 marks]**

Q2 Amy travels from Harrogate to York, then after a brief stop, to Leeds. She leaves Harrogate at 09:30, and arrives in York at 10:10. She leaves York at 10:40 and arrives in Leeds at 11:00. York is 22 miles from Harrogate, and Leeds is 20 miles from York.

2(a) Find the speed of travel between Harrogate and York.

[2 marks]

2(b) Find the speed of travel between York and Leeds.

[2 marks]

2(c) Find the average speed of the entire journey, including the stop in York.

[3 marks]

Q3 Find the distance travelled in each of these cases.

3(a) 2 m/s for 100 s **[2 marks]**

3(b) 18 m/s for 1200 s **[2 marks]**

3(c) 25 m/s for 400 s **[2 marks]**

3(d) 16 m/s for 256 s **[2 marks]**

3(e) 1000 m/s for 3600 s **[2 marks]**

3(f) 22 km/h for 2 hr **[2 marks]**

3(g) 35 mph for 3 hr **[2 marks]**

3(h) 70 mph for 8 hr **[2 marks]**

3(i) 12 m/s for 360 s **[2 marks]**

3(j) 110 km/h for 6 hr **[2 marks]**

- Q4** The speed limit on a motorway between Cadiz and Barcelona is 110 km/h. Barcelona is 1109 km away from Cadiz.
- 4(a)** Is it possible to drive from Cadiz to Barcelona in 10 hours, if all of the driving can be done on the motorway? **[2 marks]**
- 4(b)** Madrid is 647 km from Cadiz and 626 km from Barcelona. How much further is it from Cadiz to Barcelona if driven via Madrid? **[2 marks]**
- 4(c)** Given that the speed limit on all motorways in Spain is 110 km/h, and all of the driving can be done on motorways, is it possible to drive from Cadiz to Madrid in 6 hours? **[2 marks]**
- 4(d)** Is it possible to drive from Madrid to Barcelona in 6 hours? **[2 marks]**
- 4(e)** Is it possible to drive from Cadiz to Barcelona via Madrid in 11 hours? **[2 marks]**

Q5 Find the time taken for travel in each of these cases.

5(a) 100 m at 2 m/s [2 marks]

5(b) 37000 m at 37 m/s [2 marks]

5(c) 350 m at 14 m/s [2 marks]

5(d) 504 m at 21 m/s [2 marks]

5(e) 50400 m at 24 m/s [2 marks]

5(f) 650 km at 26 km/h [2 marks]

5(g) 262144 m at 31.25 m/s [2 marks]

5(h) 608 mi at 19 mph [2 marks]

5(i) 76.8 km at 30 km/h [2 marks]

5(j) 90 mi at 45 mph [2 marks]

Q6 The Aberdeen to Penzance train is the longest direct train in the UK.

6(a) The first leg of the journey is Aberdeen to Edinburgh, a distance of 93 miles. If the train averages 80 mph, how long does this leg take?

[2 marks]

6(b) The second leg of the journey is Edinburgh to York, a distance of 210 miles. If the train averages 120 mph, how long does this leg take?

[2 marks]

6(c) The third leg of the journey is York to London, a distance of 210 miles. If the train averages 100 mph, how long does this leg take?

[2 marks]

6(d) The final leg of the journey is London to Penzance, a distance of 320 miles. If the train averages 80 mph, how long does this leg take?

[2 marks]

6(e) Find how long the journey takes overall.

[2 marks]

Q7 A popular extreme cycling challenge is to cycle from Land's End to John o' Groats. This challenge usually takes participants several days.

7(a) If it takes Robert 38 days to complete the challenge, and he cycles 23 miles per day, what is the distance from Land's End to John o' Groats?

[2 marks]

7(b) Ellie intends to cycle the challenge, and thinks she can cycle 46 miles per day. How many days will she need to complete the challenge?

[2 marks]

7(c) Ellie finds she can actually only cycle 38 miles per day. How many days will it take her now?

[2 marks]

7(d) Tilda intends to break the record for the challenge. She can cycle at 9.5 mph on average, and cycles for 11.5 hours per day. The record is 9 days. Does she break the record?

[3 marks]