

1. A car travels for 3 hours.  
Its average speed is 75 km/h.

Work out the total distance the car travels.

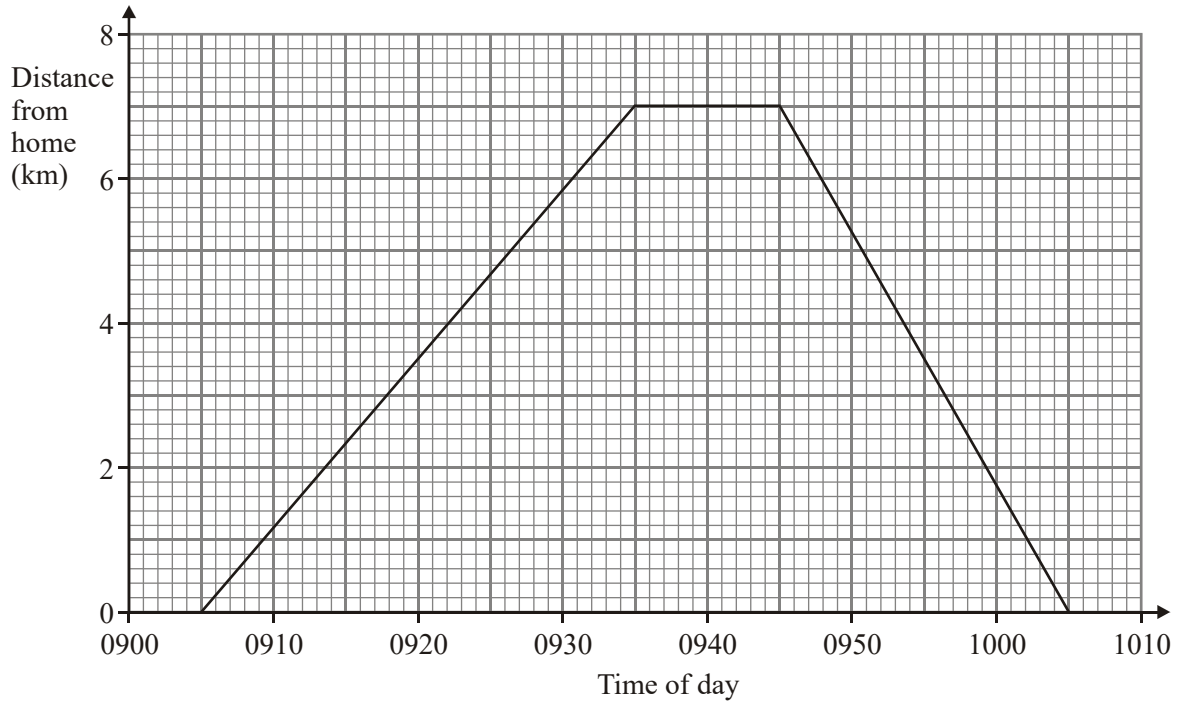
..... km  
(Total 2 marks)

2. Daniel leaves his house at 07 00.  
He drives 87 miles to work.  
He drives at an average speed of 36 miles per hour.

At what time does Daniel arrive at work?

.....  
(Total 3 marks)

3. Anil cycled from his home to the park.  
 Anil waited in the park.  
 Then he cycled back home.  
 Here is a distance-time graph for Anil's complete journey.



(a) At what time did Anil leave home?

..... (1)

(b) What is the distance from Anil's home to the park?

..... km (1)

(c) How many minutes did Anil wait in the park?

..... (1)  
 (Total 3 marks)

4. Fred runs 200 metres in 21.2 seconds.

- (a) Work out Fred's average speed.  
Write down all the figures on your calculator display.

..... metres per second (2)

- (b) Round off your answer to part (a) to an appropriate degree of accuracy.

..... metres per second (1)  
(Total 3 marks)

5. James and Sam went on holiday by plane.

The pilot said the speed of the plane was 285 kilometres per hour.

James told Sam that 285 kilometres per hour was about the same as 80 metres per second.

Was James correct?

Show working to justify your answer.

**(Total 3 marks)**

6. Ann, Bill and Colin are travelling in a car from Glasgow to Poole.  
Ann, Bill and Colin share the driving so that the distances they drive are in the ratio 3:4:4  
Ann drives a distance of 210 km.

- (a) Calculate the total distance they travelled from Glasgow to Poole.

..... km

**(3)**

Ann drives the 210 km in 2 hours 40 minutes.

- (b) Work out Ann's average speed.

..... km/h

(3)

Colin's case weighs 7 kg correct to the nearest kg.

- (c) (i) Write down the greatest possible weight of Colin's case.

.....kg

- (ii) Write down the least possible weight of Colin's case.

.....kg

(2)

(Total 8 marks)

7. Ann, Bill and Colin are travelling in a car from Glasgow to Poole.  
Ann, Bill and Colin share the driving so that the distances they drive are in the ratio 3:4:4  
Ann drives a distance of 210 km.

(a) Calculate the total distance they travelled from Glasgow to Poole.

..... km

(3)

Ann drives the 210 km in 2 hours 40 minutes.

(b) Work out Ann's average speed.

..... km/h

(4)

(Total 7 marks)

8. The distance from Liverpool to Prague is 1200 km.  
A flight from Liverpool to Prague lasts 4 hours.

Work out the average speed of the aeroplane.

..... km/h  
(Total 2 marks)

9. An aeroplane flies from Liverpool to Prague, a distance of 1200 km.  
The aeroplane takes 4 hours.

Work out the average speed of the aeroplane.  
State the units of your answer.

.....  
(Total 3 marks)

10. The distance from Bristol to Leeds is 216 miles.
- (a) Cara drove the 216 miles in 4 hours 30 minutes.  
Calculate her average speed.  
State the units of your answer.

..... (4)

(b) The amount of petrol Cara's car used for the journey was 23 litres, correct to the nearest litre.

(i) Write down the least possible amount of petrol used.

..... litres

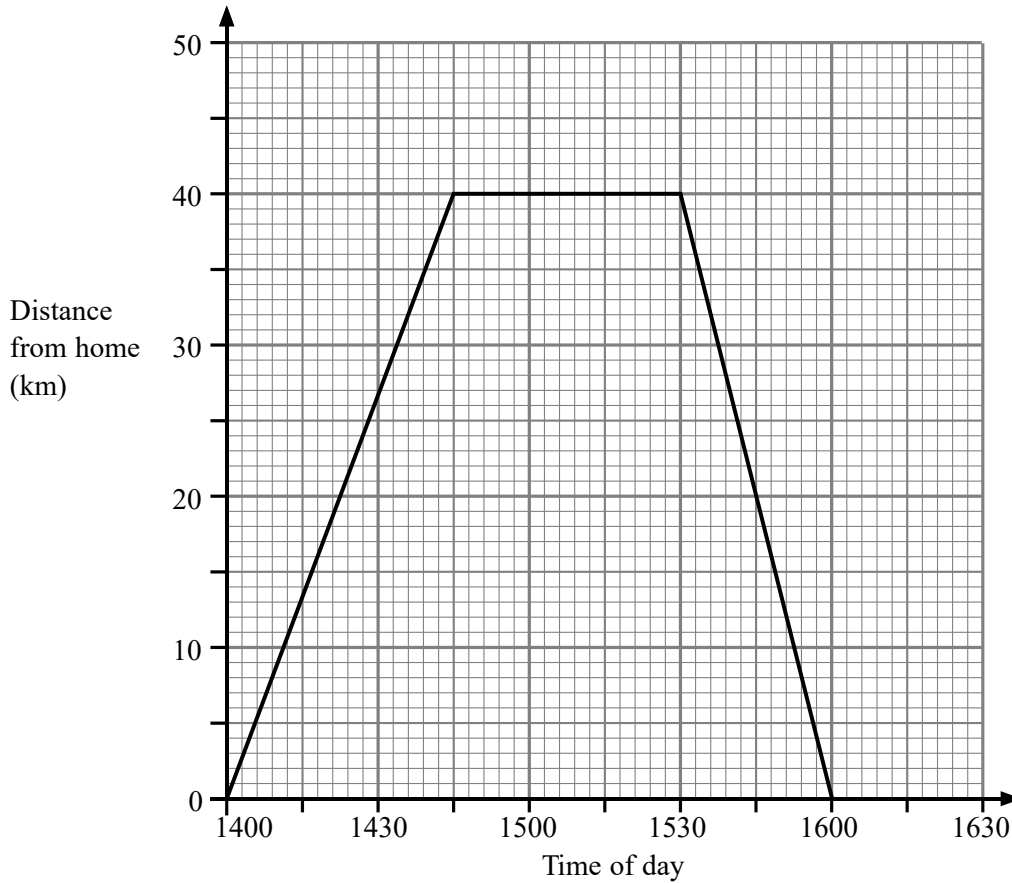
(ii) Write down the greatest possible amount of petrol used.

..... litres

**(2)**  
**(Total 6 marks)**



11. Judy drove from her home to the airport.  
 She waited at the airport.  
 Then she drove home.  
 Here is the distance-time graph for Judy's complete journey.



- (a) What is the distance from Judy's home to the airport?

..... km

(1)

(b) For how many minutes did Judy wait at the airport?

..... minutes

(1)

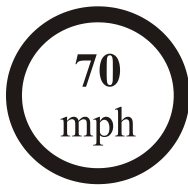
(c) Work out Judy's average speed on her journey home from the airport.  
Give your answer in kilometres per hour.

..... kilometres per hour

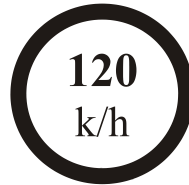
(2)

(Total 4 marks)

12.



Great Britain



Spain

The motorway speed limit in Great Britain is 70 miles per hour.  
The motorway speed limit in Spain is 120 kilometres per hour.

Which of these speed limits is the lowest speed?  
You must show working to explain your answer.

.....

(Total 3 marks)

13. A plane flies 1400 kilometres in 2 hours 20 minutes.

Calculate the average speed, in km/h, of the plane.

..... km/h  
(Total 3 marks)

14. There are 40 litres of water in a barrel.

The water flows out of the barrel at a rate of 125 millilitres per second.

1 litre = 1000 millilitres.

Work out the time it takes for the barrel to empty completely.

..... seconds  
(Total 3 marks)

15. A car travels at 30 miles per hour.  
Change 30 miles per hour to kilometres per hour.

..... kilometres per hour  
(Total 2 marks)

16. Mia drove a distance of 343 km.  
She took 3 hours 30 minutes.

Work out her average speed.  
Give your answer in km/h.

..... km/h  
(Total 3 marks)

17. An aeroplane flies from Liverpool to Prague, a distance of 1200 km.  
The aeroplane takes 4 hours.

Work out the average speed of the aeroplane.

..... km/h  
(Total 2 marks)

18. Joe travelled 60 miles in 1 hour 30 minutes.

Work out Joe's average speed.  
Give your answer in miles per hour.

..... miles per hour  
(Total 2 marks)

19. Sally drives a distance of 100 miles.  
It takes  $2\frac{1}{2}$  hours for Sally to drive this distance.

Work out her average speed.

25 miles  
per hour  
      
A

30 miles  
per hour  
      
B

40 miles  
per hour  
      
C

60 miles  
per hour  
      
D

250 miles  
per hour  
      
E

(Total 1 mark)

20. Peter cycles 20 miles in  $2\frac{1}{2}$  hours.

What is his average speed in miles per hour?

5 miles per hour  
A

8 miles per hour  
B

10 miles per hour  
C

12 miles per hour  
D

50 miles per hour  
E

(Total 1 mark)

21. A train travelled 120 km in  $1\frac{1}{2}$  hours.

What was the average speed of the train?

100 km/h

80 km/h

60 km/h

120 km/h

180 km/h

**A**

**B**

**C**

**D**

**E**

(Total 1 mark)

22. The distance from London to New York is 3456 miles.  
A plane takes 8 hours to fly from London to New York.

Work out the average speed of the plane.

..... miles per hour  
(Total 2 marks)

hours.

What was the average speed of the train?

100 km/h

80 km/h

60 km/h

120 km/h

180 km/h

**A**

**B**

**C**

**D**

**E**

(Total 1 mark)

23. Adam cycled 24 km in 2 hours.

Work out his average speed.

..... km/h  
(Total 2 marks)

24. Stuart drives 180 km in 2 hours 15 minutes.

Work out Stuart's average speed.

..... km/h  
(Total 3 marks)

25. Seamus travelled 120 miles in 3 hours.

What was his average speed in miles per hour (mph)?

360 mph

**A**

40 mph

**B**

36 mph

**C**

4 mph

**D**

30 mph

**E**

(Total 1 mark)

26. There are 80 litres of water in a tank.

Rob turns a tap on.

Water flows from the tank at a rate of 5 litres per minute.

How many minutes will it take for the tank to become completely empty?

5 minutes

400 minutes

20 minutes

16 minutes

80 minutes

**A**

**B**

**C**

**D**

**E**

**(Total 1 mark)**

27. The speed of an aeroplane is 480 kilometres per hour.

How far does the aeroplane fly in 2 hours 30 minutes?

960 km

1200 km

1104 km

192 km

11 040 km

**A**

**B**

**C**

**D**

**E**

**(Total 1 mark)**



28. John travelled 30 km in 1.5 hours.  
Kamala travelled 42 km in 2 hours.

Who had the greater average speed?  
You must show your working.

.....  
(Total 3 marks)

1.  $75 \times 3$   
 $= 225$

2

*M1 for  $75 \times 3$  oe*

*A1 cao*

*180  $\times$  75 seen can get the M1 for knowing that distance is the product of speed and time. However the product must be stated explicitly; 13500 with no working is **not** good enough.*

[2]

2. (0) 9 25

3

$87 \div 36 = 2.41666\dots$

$0.41666\dots \times 60 = 25$

**or**

$2.41666\dots \times 60 = 145$

*M1 for  $87 \div 36$  or  $2.41(666)\dots$  or  $2.42$  seen*

*M1 ft for " $2.41666\dots$ "  $\times$  60 oe, or  $0.41666\dots \times 60$*

*A1 cao*

*SC. B1 for 2 hour 41 minutes or 2 hrs 42 mins or 942 or 941*

[3]

3. (a) 09 05 1  
*BI for 09 05 oe*
- (b) 7 1  
*BI for 7*
- (c) 10 1  
*BI for 10*
- [3]**
4. (a) 9.43396 2  
 $200 - 21.2 = 9.43396\dots$   
*M1 for  $200 - 21.2$  (imply from 9...)*  
*A1 for 9.43396.*
- (b) 9.4 1  
*BI ft 2sf or 3sf on '9.43396'*
- [3]**
5.  $285 \times 1000 / (60 \times 60) = 79.1\dot{6}$  3  
*M2 for  $285 \times 1000 \div 60 \div 60$*   
*or  $80 \times 60 \times 60 \div 1000$*   
*or for a correct method to obtain two comparable values*  
*e.g  $80 \times 60 \times 60$  and  $285 \times 1000$*   
*(M1 for  $285 \div 60 \div 60$  or 0.079 (...)) seen*  
*or  $80 \times 60 \times 60$  or 288000 seen*  
*or for  $285 \times 1000$  or 285000 seen*  
*or  $80 \div 1000$  or 0.08 seen)*  
*A1 for 288 or 79.(....) or for two correctly calculated*  
*comparable values e.g 288000 and 285000*
- [3]**
6. (a) 1 share =  $210 \div 3 (=70)$   
 Total = "70"  $\times (3+4+4) =$   
 770 3
- M1 for association of 210 with 3*  
*M1 for  $(210 \div 3) \times (3+4+4)$*   
*A1 cao*

(b) Average speed =  $210 \div (2\text{hrs } 40\text{ mins})$   
 $= \frac{210}{2\frac{2}{3}} \text{ km/h}$   
 $= 78.75$  3

*M1 uses speed = distance/time*  
*M1 (dep) for evidence of converting time to a single unit*  
*A1 for 77 to 81*  
*SC: B2 for answer of 87.5*

(c) (i) 7.5 2  
*B1 cao*

(ii) 6.5 2  
*B1 cao*

[8]

7. (a) 1 share =  $210 \div 3 (=70)$   
 Total = '70'  $\times (3+4+4)$   
 $= 770$  3

*M1 for association of 210 with 3*  
*M1 for  $(210 \div 3) \times (3 + 4 + 4)$  oe*  
*A1 cao*

(b) Average speed =  $210 \div (2\text{hrs } 40\text{ mins})$   
 $= \frac{210}{2\frac{2}{3}} \text{ km/h}$   
 $= 78.75$  4

*M1 uses speed = distance/time*  
*M1 (dep) evidence of converting time to a single unit*  
*A1 for 77 to 81*  
*SC: B2 for answer of 87.5*  
*B1 for km/h (or other valid unit if consistent with their value)*

[7]

8.  $1200 \div 4$   
 300 2

*M1 for  $1200 \div 4$*   
*A1 cao*

[2]

9.  $1200 \div 4$   
300 km/h or 5 km/min 3  
*M1 for  $1200 \div 4$  or  $1200 \div 240$*   
*A1 cao*  
*B1(indep) units as km/h; accept kmph, kph, km per hour, km/ph*  
*or units as km/min.* [3]
10. (a)  $\frac{216}{4.5}$  4  
= 48 mph  
0.8 m/min  
*M1 for  $\frac{216}{time}$  eg time = 4h30, 4.5, 4.3, 270*  
*B1 for the digits 45 seen*  
*A1 for 48 cao or 0.8 cao*  
*B1(indep) for mph or m/h, m/min (must be consistent)*
- (b) (i) 22.5 2  
*B1 cao*
- (ii) 23.5 [6]  
*B1 23.5 or 23.49 or 23.49... or 23.4999(9...) oe*
11. (a) 40 1  
*B1cao*
- (b) 45 1  
*B1 for 42 – 48 accept 3/4 hour*
- (c)  $40 \times 2$  or  $\frac{40}{30} \times 60$  or  $40 \div \frac{1}{2}$  2  
= 80  
*M1 for  $40 \times 2$  or  $\frac{40}{30}$  or  $40 \div \frac{1}{2}$*   
*A1 cao*  
*NB  $\frac{40}{45} \times 60$  gets M0 A0* [4]

12. 5 miles = 8 km  
 $70\text{mph} \div 5 \times 8 = 112 \text{ km/h}$   
 or  
 $120\text{km/h} \div 8 \times 5 = 75 \text{ mph}$   
 Faster than 70 mph  
 70mph  
 (Great Britain)  
 (112 km)

3

*M1 5 miles = 8 km; or 70 mph is about 100 km/h or 1km = 0.6(25) miles or 1mile=1.6km oe*  
*M1  $70 \div 5 \times 8 (= 112)$  or  $120 \div 8 \times 5 (= 75)$*   
*A1 (dep on at least M1) GB or 70 mph*  
*Refer to both answer line and working.*  
*NB GB or 70 mph without working scores 0 marks*

[3]

13. Distance  $\div$  time:  $1400 \div 2 \text{ h } 20 \text{ min}$   
 20 mins is  $\frac{1}{3}$  hour  
 $1400 \times 3 \div 7 = 600 \text{ kph}$

3

*B1 20 mins as  $\frac{1}{3}$  hour or as 0.33.....hour*  
*M1 for distance  $\div$  time eg  $1400 \div "2\text{h } 20 \text{ min}"$*   
*A1 cao*  
*or*  
*B1 2 hour 20min = 140 (min)*  
*M1 Speed =  $\frac{1400}{140} = (10 \text{ km per minute})$*   
*A1 cao*

[3]

14.  $\frac{40000}{125} = \frac{8000}{25} = 320$  seconds 3

*M1 for  $40 \times 1000$  or  $125 \div 1000$  or  $40000$  or  $0.125$*

*M1 for  $\frac{'40000'}{125}$  or  $\frac{40}{'0.125'}$*

*A1 cao*

**OR**

*M1 for  $1000 \div 125$*

*M1 for  $'8' \times 40$*

*A1 cao*

[3]

15. 48 2

$$30 \times \frac{8}{5}$$

*B2 for an answer in the range of 44 to 52*

*(B1 for a factor of  $\frac{8}{5}$  or  $\frac{5}{8}$  oe seen)*

[2]

16. 98 3

$$\frac{343}{3.5}$$

*M1 for  $343 \div \text{their time}$*

*B1 for 3.5 or  $3 \frac{1}{2}$  seen*

*A1 cao*

[3]

17.  $\frac{1200 \div 4}{300}$  2

*M1 for  $1200 \div 4$*

*A1 cao*

[2]

18.  $60 \div 1\text{h } 30\text{ mins}$  or  $60 \div 1.5$  2  
 or  $60 \div 90 \times 60$  or  $60 \div 90$  or  $60 \div 1.3$   
 = 40  
*M1 for attempt to divide 60 by "1h 30m" oe*  
*(accept 1.5 or 1.3(0) or 90 as "time")*  
*A1 cao*  
*SC: Award B1 for an answer of 46 (.15)* [2]
19. C [1]
20. B [1]
21. B [1]
22.  $3456 \div 8$  2  
 432  
*M1 for  $3456 \div 8$*   
*A1 cao* [2]
23.  $24 \div 2$  2  
 12  
*M1 for  $24 \div 2$  or 12 km in 1 hour*  
*A1 cao* [2]

24.  $180 \div 2.25$   
80

3

*M1 for  $180 \div 2$  hr 15 mins or  $180 \div 2.15$  or  $180 \div 135$*

*M1 for  $180 \div 2.25$  or  $180 \div 2\frac{1}{4}$  or " $1.3(33)$ "  $\times 60$*

*A1 for 80*

*SC B1 for 83.72 or or 1.3(333...)*

**[3]**

25. B

**[1]**

26. D

**[1]**

27. B

**[1]**



28.  $\frac{30}{1.5} = 20$   
 $\frac{42}{2} = 21$

Kamala

3

*M1 for  $\frac{30}{1.5}$  or  $\frac{42}{2}$  or (accept minutes)*

*A1 for 20 and 21*

*A1 for Kamala cao*

*Note: answer only scores M0 A0 A0*

**Alternative method:**

*M1 for 10 km in 0.5 hours*

*A1 for 40 km in 2 hours*

*A1 for Kamala cao*

**OR**

*M1 for 10.5 km in 0.5 hours*

*A1 for 31.5 km in 1.5 hours*

*A1 for Kamala cao*

**OR**

*M1 for 60 km in 3 hours or 63 km in 3 hours*

*A1 for 60 km in 3 hours and 63 km in 3 hours*

*A1 for Kamala cao*

**OR**

*M1 for 10 km in 30 minutes or 10.5 km in 30 minutes*

*A1 for 60 km in 30 minutes and 10.5 km in 30 minutes*

*A1 for Kamala cao*

[3]

1. This question was generally well done. 25 (75/3) was a common incorrect answer and many candidates mixed units by multiplying 75 km/h by 180 minutes.
2. The majority of candidates worked out  $87 \div 36$ . Unfortunately few candidates were then able to handle the fractional hours, many incorrectly working with decimal time rather than hours and minutes.

**3. Mathematics A****Paper 1**

Over 80% of candidates were able to complete the first two parts of this question correctly and 67% were able to give the correct response to part (c).

**Paper 3**

Parts (a), (b) and (c) were answered very well with most candidates interpreting the distance-time graph correctly and gaining all three marks.

**Mathematics B Paper 14**

There were good attempts at parts (a) and (b) with over 85% getting both marks. Two thirds of the candidates were able to correctly work out how long Anil waited in the park.

**4. Paper 4**

This was a well answered question, showing candidates strengths in making speed calculations. Nearly  $\frac{3}{4}$  of candidates gave the correct answer in part (a), with most of those going on to gain the mark in part (b). The main calculation error in part (a) was in undertaking a multiplication rather than a division. The other significant error was in unnecessary rounding of answers in part (a), irrespective of the fact that the question clearly asked candidates to “write down all the figures”.

**Paper 6**

This is a speed, distance and time problem. Candidates find the time by dividing 200 by 21.1. The vast majority of candidates were able to do this. Part (b) involved rounding off the answer to part (a) to a sensible degree of accuracy. In this case that meant writing the answer correct to 2 or 3 significant figures.

- 5.** Candidates found this a challenging question and a wide variety of approaches were seen. Almost a quarter of candidates gained full marks and there were some excellent responses which were well set out and easy to follow. Converting 285 kilometres per hour into metres per second was the approach most commonly seen. A significant number of candidates did not know how to start the process but many of those who persevered gained at least one mark. Often this was for  $285 \times 1000$  or for  $285 \div 60 \div 60$ . The most common errors were for candidates to multiply 285 by 100 instead of by 1000 and to divide 285 by 60 just once. Some attempted to compare two speeds with different units, e.g. 288000 and 285.

6. Part (a) was answered quite well with more than half of the candidates gaining full marks. Those who made the link between 210 and 3 were often successful but some of those who realised that 210 represented 3 parts went on to work out  $70 + 280 + 280$  instead of  $210 + 280 + 280$ . A significant number of candidates, however, misunderstood the question and divided 210 by 11. In part (b) many candidates attempted to divide the distance by the time but relatively few could express 2 hours 40 minutes in a suitable form for the calculation. Division by 2.40 was very common. Most of those who chose to divide by 160 minutes failed to multiply the result by 60. Less than 15% of candidates gave both the greatest and the least possible weight in part (c). When just one of these was correct it tended to be the least possible weight.

7. Part (a) was done well by the vast majority of candidates. In part (b), virtually all knew, and were able to use  $\text{speed} = \text{distance} \div \text{time}$ , and there was nearly always an attempt to give the units. Many knew that they had to convert the time to a single unit, but this was done with varying success. Those converting 2 hours 40 minutes to minutes generally achieved the greatest accuracy, whilst those converting to hours generally had the least accuracy  $2\frac{2}{3}$  was often inappropriately rounded to 2.6 or 2.7. Candidates should be instructed to work in fractions or give thirds to two decimal places or more. Many of the weaker candidates thought the time was 2.4 hours and/or the units were mph.

#### 8. Specification A

There was a bit of success with this question, although many more candidates may well have scored the first mark by recognising that you had to divide 1200 by 4. Unfortunately it was not uncommon to see an answer of 30 or 3000 without any working shown which meant that the method mark could not be scored.

#### Specification B

This question was well attempted with the correct answer 300 recorded by about 40% of candidates. Of candidates who showed the intention to calculate  $1200 \div 4$ , some were unable to complete the calculation accurately.

9. The units were dependent on whatever the candidates had chosen to work their answer in. The easiest was km/h, which is what the units were given as in the question. However, some candidates chose to complicate their solution by working towards miles/min, metres/minute or metres/second. The most common units error was to calculate the 300, but then to give the units as mph. The majority of candidates gained the marks for the numerical calculation.

10. This question proved to be a good discriminator. Most candidates knew that they had to divide distance by time to find speed, but the ways they dealt with the 4 hours 30 minutes were varied. The majority expressed the time part as 4.3 hours. A significant number calculated  $216 \div 270 = 0.8$ , but then tried unsuccessfully to convert their answer to mph.

**11. Foundation Tier**

Part (a) was well answered with almost all candidates being able to read off the distance. Candidates were less successful in interpreting the time scale and 15 minutes was seen infrequently. In part (c), the most common answer was '20' which appeared to come from '40 in half an hour, therefore 20 in one hour'. Very few candidates obtained the correct result to this question and often failed to gain any credit for working as none was shown.

**Intermediate Tier**

Part (a) was answered very well indeed. Slightly fewer candidates were successful in part (b) with some errors appearing to result from the scale being misread. The seemingly straightforward question in part (c) caused a lot of difficulties. Some of the better candidates gave the answer of 80km/h with little or no working shown but there was a significant number who made mistakes in their attempts. The most common approach to find the speed was to divide 40 km by 30 (minutes). Many then failed to multiply by 60 and answers in the region of 1.3 were frequently seen. Those who converted the time into hours and wrote  $40 \div 2$  often gave the answer as 20 km/h but at least gained the method mark. It is a pity that answers of 20 were often seen without any working, preventing the examiner from awarding any marks.

**12. Foundation Tier**

Hardly any candidates could recall the fact that 5 miles is (roughly) equivalent to 8 kilometres or an equivalent result, and so the vast majority of candidates were unable to make any progress in this question. Most candidates merely gave an answer without any attempt to explain why. These candidates could not be given any marks.

**Intermediate Tier**

Few candidates demonstrated any real understanding of the approximate equivalence between miles and kilometres, even though this is one of the standard approximate equivalences that candidates are required to know. Most of the work presented was guesswork, most of which was therefore invalid. Those who did remember 5 miles = 8km, or an equivalent, usually then presented a sound argument, and arrived at the correct result.

13. Most candidates were able to quote and use the rule that ‘average speed = distance  $\div$  time’. The problems came with handling the 20 minutes. There were alternative approaches. One was to change the 2 hours 20 minutes to minutes and then work out  $1400 \div 140 = 10$ . Unfortunately, many then left the answer as this, not realising that the 10 referred to units of kilometres per minute and that 10 km/h is physically far too slow for a plane. The second approach was to change the 2 hours 20 minutes to hours. This necessitated changing 20 minutes to  $\frac{1}{3}$  of an hour (rare!) or into a decimal. Many changed 20 minutes to 0.3 hours and lost the accuracy mark as the answer they got was too inaccurate. Those who used the full display of their calculator picked up all 3 marks.
14. There were two main methods used for answering this question. The first, converting 40 litres to millilitres and then dividing by 125 posed problems for candidates in the evaluation. Often, the number of millilitres was incorrect with  $40 \times 1000$  frequently being evaluated as 4000. The subsequent division by 125 was very poorly attempted or, in some cases, not attempted. Too often the answer found by using this method was incorrect. The second method, finding the number of seconds for one litre, i.e. dividing 1000 by 125, and then multiplying by 40, usually led to the correct answer. There were frequent attempts at repeated addition rather than division and these often resulted in incorrect answers. Sometimes a mixture of the two methods was seen in this question.
15. This question was very poorly done by all levels of ability. A few correct answers within the range were seen, usually without any working shown. It was usual to see attempts at the conversion using factors of 10, giving answers of 300 and 3000.
16. Few were able to convert 3 hours 30 minutes to 3.5 hours with  $343 \div 3.3$  being a common error. Most gained a method mark for showing that they were dividing 343 by their time but a substantial number of candidates did not show this working resulting in no marks.
17. The most common wrong answer seen here was 4800 ( $1200 \times 4$ ), although full marks were achieved by the vast majority of candidates.

18. Although some candidates did show an understanding that Joe's speed could be calculated by dividing the given distance by the given time, most did not know how to cater for the time given in hours and minutes. Many divided 60 by 90 with an answer in miles per minute, whilst others divided 60 by 1.3. Others gave the answer as 1.5 having done  $90 \div 60$ . Some candidates managed to work out that the speed was 20 miles for every 30 minutes, but failed to convert this to miles per hour. At least half the candidates were able to access the method mark but most did not go on to reach 40 miles per hour.

19. No Report available for this question.

20. No Report available for this question.

21. No Report available for this question.

22. It was pleasing to note that over 60% of the candidates got the last question on the paper fully correct. Again, candidates are encouraged to show their working as most candidates just wrote the answer.

Some wrote 430 which showed they knew that they had to divide 3456 by 8 but without this being shown they could not be given any marks.

The most common incorrect response was to multiply the two numbers writing that the average speed of the plane was 27648 miles per hour ... quite an achievement! A few converted the hours into minutes and so could not get both marks.

23. Most candidates showed an understanding that speed is equal to distance divided by time, although 48 ( $24 \times 2$ ) and 5 ( $120 \text{ minutes} \div 24$ ) were often seen.

**24. Foundation**

This question was not well answered. Most candidates did divide 180 km by 2hrs 15 minutes but put  $180 \div 2.15$  into their calculator to give the answer of 83.72 or used  $180 \div 135$  to give 1.33... These candidates were rewarded with one mark for recognising that speed is distance divided by time. Very few candidates were able to give the correct answer of 80 km per hour.

**Higher**

This question was well understood but not well answered. Most candidates did divide 180 km by 2hrs 15 minutes but put  $180 \div 2.15$  into their calculator to give the answer of 83.72 or used  $180 \div 135$  to give 1.33... These candidates were rewarded with one mark for recognising that speed is distance divided by time. Only the more able candidates were able to give the correct answer of 80 km per hour for dealing correctly with dividing by fractions of an hour.

25. No Report available for this question.

26. No Report available for this question.

27. No Report available for this question.

28. This question was well answered by the more able candidates with many calculating the average speeds correctly before making the correct conclusion. Other methods such as considering the distance covered by each of John and Kamala in 30 minutes were often employed successfully. A significant number of candidates divided the time taken by the distance travelled but were then unable to convince examiners that they understood what they were doing by making the correct conclusion. Weaker candidates often multiplied the distance travelled by the time taken. No marks could be awarded to candidates who failed to show any working.