**Crossover questions Foundation / Higher Tier**

**Answer ALL questions.**

**Write your answers in the spaces provided.**

**You must write down all the stages in your working.**

**22/1** (*a*)Expand and simplify (*x* + 5)(*x* – 9)

.......................................................

**(2)**

(*b*)Factorise fully 9*x*2 + 6*x*

.......................................................

**(2)**

**(Total for Question 22/1 is 4 marks)**

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**23/2** (*a*)Use your calculator to work out 

Write down all the figures on your calculator display.

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**(2)**

(*b*)Write your answer to part (*a*)correct to 4 significant figures.

.......................................................

**(1)**

**(Total for Question 23/2 is 3 marks)**

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**24/3** The scatter graph shows information about the marks a group of students got in a Science

test and in a Maths test.

Jamie got a mark of 34 in the Science test.

Using the scatter graph, find an estimate for Jamie’s mark in the Maths test.

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**(Total for Question 24/3 is 2 marks)**

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**25/4** The table gives information about the times taken, in seconds, by 18 students to run a race.

|  |  |
| --- | --- |
| **Time (*t* seconds)** | **Frequency** |
| 5 < *t* ≤ 10 | 1 |
| 10 < *t* ≤ 15 | 2 |
| 15 < *t* ≤ 20 | 7 |
| 20 < *t* ≤ 25 | 8 |

Work out an estimate for the mean time.

Give your answer correct to 3 significant figures.

....................................................... seconds

**(Total for Question 25/4 is 3 marks)**

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**26/5** Write 37 cm3 in mm3

.......................................................mm3

**(Total for Question 26/5 is 1 mark)**

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**27/6** Nimer was driving to a hotel.

He looked at his Sat Nav at 13 30

|  |  |
| --- | --- |
| Time | 13 30 |
| Distance to destination | 65 miles |

Nimer arrived at the hotel at 14 48

Work out the average speed of the car from 13 30 to 14 48

You must show all your working.

.......................................................mph

**(Total for Question 27/6 is 4 marks)**

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**28/7** (*a*)Write 32 460 000 in standard form.

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**(1)**

(*b*)Write 4.96 × 10−3 as an ordinary number.

.......................................................

**(1)**

Asma was asked to compare the following two numbers.

*A* = 6.212 × 108 and *B* = 4.73 × 109

She says,

“6.212 is bigger than 4.73 so *A* is bigger than *B*.”

(*c*)Is Asma correct?

You must give a reason for your answer.

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**(1)**

**(Total for Question 28/7 is 3 marks)**

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**29/8** The diagram shows a regular pentagon and a parallelogram.

Work out the size of the angle marked x.

You must show all your working.

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**(Total for Question 29/8 is 4 marks)**

**TOTAL FOR PAPER IS 24 MARKS**

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