1 Find which is larger

32% of 450 or $\frac{2}{5}$ of 375

You must show all your working.

$32\% = \frac{32}{100} = 0.32$

$0.32 \times 450 = 144$ (1) $\frac{2}{5} \times 375 = 150$ (1)

150 > 144 therefore '$\frac{2}{5}$ of 375' is larger than '32% of 450'

(1) $\frac{2}{5}$ of 375

(Total for Question 1 is 3 marks)

2 Here is a list of numbers.

1	17	21	25	26	31	39	64

From this list, write down

(a) an even number

26 (1)

.....

(1)

(b) a multiple of 3

21 (1)

.....

(1)

(c) a prime number

17 (1)

.....

(1)

(d) a cube number

64 (1)

.....

(1)

(Total for Question 2 is 4 marks)

3

3	2	6	8

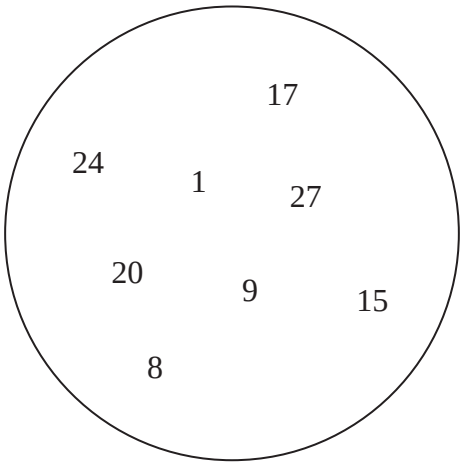
(a) Write down the largest possible four digit number using all the digits that are in the box.

List down the numbers from largest to smallest.

8632 (1)

.....

(1)



From the numbers in the circle, write down

(b) a multiple of 6

24 (1)

.....

(1)

(c) a prime number

17 (1)

.....

(1)

(Total for Question 3 is 3 marks)

4 (a) Write these decimals in order of size.
Start with the smallest decimal.

0.501 0.51 0.5 0.55

0.5 , 0.501 , 0.51 , 0.55 (1)

.....

(1)

(Total for Question 4 is 1 marks)

5 Here are five mathematical signs

+	>	=	∈	<

(a) Write one of these five signs in each box so that each of these statements is true.

(i)

4 °C	<	9 °C

(1)

(ii)

–3 °C	>	–8 °C

(1)

The table gives information about the boiling points and the freezing points of some elements.

Element	Chlorine	Mercury	Neon	Oxygen
Boiling point (°C)	–35	357	–246	–183
Freezing point (°C)	–101	–39	–249	–218

(b) Which of these elements has the lowest boiling point?

Neon (1)

.....

(1)

(c) Which of these elements has the largest difference in temperature between its boiling point and its freezing point?

Mercury (1)

.....

(1)

Dr Strauss is going to cool chlorine from its boiling point to its freezing point.
He knows that it will take 2 minutes for the temperature of the chlorine to go down 10 °C.

(d) Work out how long it will take the chlorine to cool from its boiling point to its freezing point?

Difference between boiling point and freezing point :

$-35 - (-101) = 66$ (1)

Finding scale factor :

$\frac{66\,^{\circ}C}{10\,^{\circ}C} = 6.6$

6.6×2 minutes $= 13.2$ minutes (1)

13.2 ..... minutes

(2)

(Total for Question 5 is 6 marks)

6 (a) Write these numbers in order of size.

Start with the smallest number.

2.08 2.13 2.7 2.0034 2.111

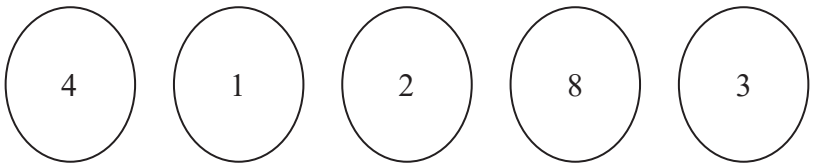
2.0034 , 2.08 , 2.111 , 2.13 , 2.7 (1)

.....

(1)

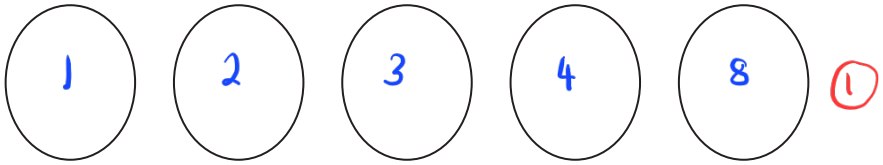
(Total for Question 6 is 1 marks)

7 Here are five discs.
Each disc has a number on it.



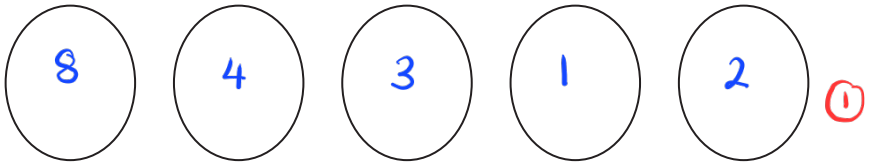
These five discs are arranged to make the number 41283

(a) Show how all five discs can be arranged to make the smallest number.



(1)

(b) Show how all five discs can be arranged to make the largest **even** number. - needs to end with even number



(1)

(c) Which of the five numbers on the discs are factors of 21?

1, 3 (2)

.....

(2)

(d) Which of the five numbers on the discs are prime numbers?

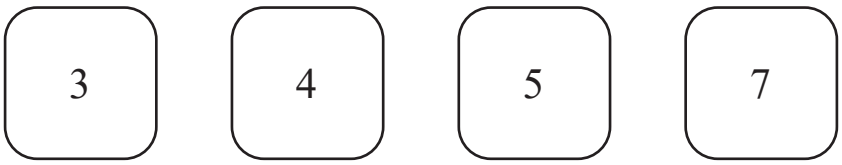
2, 3 (2)

.....

(2)

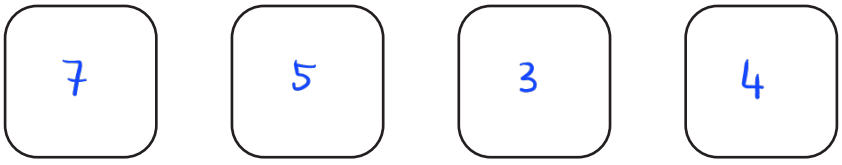
(Total for Question 7 is 6 marks)

8 Here are four cards.
Each card has a number written on it.



These four cards are arranged to make the number 3457

(a) Arrange the four cards to make the largest possible even number. - should end with an even number



(1)

Darren arranges the cards to make another number.

The difference between the number 3600 and the number that Darren makes is as small as possible.

(b) Find this difference.

Nearest number to 3600 should be 3574.

3600 - 3574 = 26

26

(2)

(Total for Question 8 is 3 marks)

9 (a) Write these numbers in order of size.
Start with the smallest number.

202 58 123 7 180

7, 58, 123, 180, 202 (1)

(1)

(b) Write these numbers in order of size.
Start with the smallest number.

0.155 1.5 0.15 0.015 1.15

0.015, 0.15, 0.155, 1.15, 1.5 (1)

(1)

(Total for Question 9 is 2 marks)

10 Here is a list of numbers.

3 6 7 8 11 25 27

(a) From the numbers in the list, write down

(i) an even number

6 or 8 (1)

(1)

(ii) a multiple of 9

27 (1)

(1)

(iii) a square number

25 (1)

(1)

(iv) a prime number

3 or 7 or 11 (1)

(1)

(b) Use brackets to make the statement correct.
You may use more than one pair of brackets in the statement.

$(2^2 + 5) \times (2 + 3^2) = 99$

(1)

(1)

(Total for Question 10 is 5 marks)

11 (d) Write these numbers in order of size.
Start with the smallest number.

−7 8 9 − 6 1 3 −

-9, -7, -3, 8, 16 (1)

(1)

(e) Write these numbers in order of size.
Start with the smallest number.

0.044 .1004 .040 .0099 .2 0

0.009, 0.04, 0.044, 0.104, 0.2 (1)

(1)

(Total for Question 11 is 2 marks)

12 (a) Write these numbers in order of size.
Start with the smallest number.

0.47 0.4 0.74 0.477 0.407

0.4 , 0.407, 0.47, 0.477, 0.74 (1)

(1)

(Total for Question 12 is 1 marks)

13 (d) Write these numbers in order of size.
Start with the smallest number.

2.803 2.008 2.081 2.83 2.8

2.008 , 2.081 , 2.8 , 2.803 , 2.83 (2)

(2)

(Total for Question 13 is 2 marks)

14 (a) Write these decimals in order of size.
Start with the smallest decimal.

0.5 0.54 0.45 0.504 0.405

0.405, 0.45, 0.5, 0.504, 0.54 (1)

(1)

(Total for Question 14 is 1 marks)

15 (a) Write these numbers in order of size.
Start with the smallest number.

171 490 84 105 233

84, 105, 171, 233, 490 (1)

(1)

(Total for Question 15 is 1 marks)

16 (c) Write these decimals in order of size.
Start with the smallest decimal.

0.204 0.24 0.04 0.2 0.042

0.04 , 0.042 , 0.2 , 0.204 , 0.24 (1)

(1)

(Total for Question 16 is 1 marks)