

Prime Factors, HCF, and LCM

Please write clearly in block capitals

Forename:

Surname:

Materials

For this paper you must have:

- mathematical instruments



You **can** use a calculator.

Instructions

- Use black ink or black ball-point pen. Draw diagrams in pencil.
- Fill in the boxes at the top of this page.
- Answer all questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- You may ask for graph paper, tracing paper and more answer paper. These must be tagged securely to this answer book.

Advice

- In all calculations, show clearly how you work out your answer.

1 Look at the numbers in the rectangle below.

(Level 3)

5	12	27	7
29	17	2	25
24	18	8	1
16	3	49	125

1(a) Write down the prime numbers.

[1 mark]

Answer _____

1(b) Define a prime number

[1 mark]

Answer _____

Turn over for next question

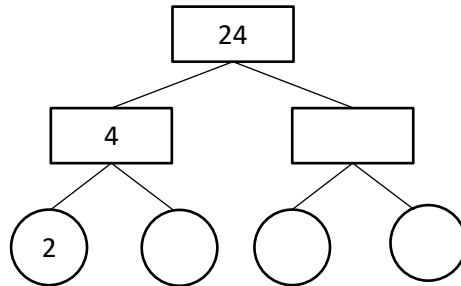
Turn over ►

2 The following prime factor trees are part complete.

(Level 3)

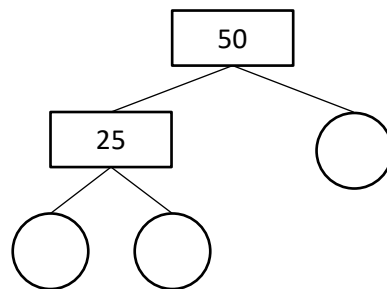
2(a) Complete the prime factor tree for 24

[2 marks]



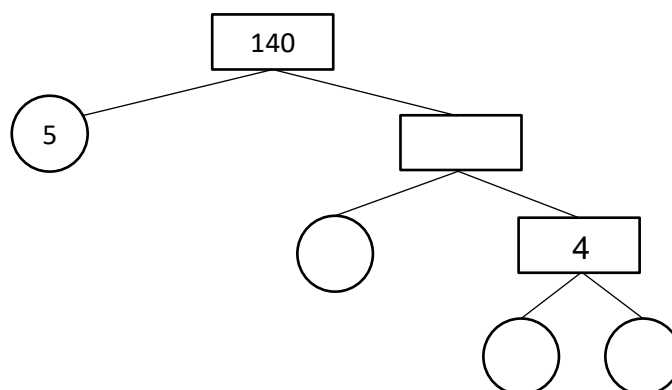
2(b) Complete the prime factor tree for 50

[2 marks]



2(c) Complete the prime factor tree for 140

[2 marks]



Turn over for next question

Turn over ►

- 3(a)** Write 72 as a product of its prime factors.
Give your answer in index form.

(Level 4)

[2 marks]

Answer _____

- 3(b)** Write 90 as a product of prime factors.
Give your answer in index form.

[2 marks]

Answer _____

- 3(c)** Write 160 as a product of its prime factors
Give your answer in index form.

[2 marks]

Answer _____

Turn over for next question

4(a) Write 1620 as a product of its prime factors.

(Level 4)

[2 marks]

Answer _____

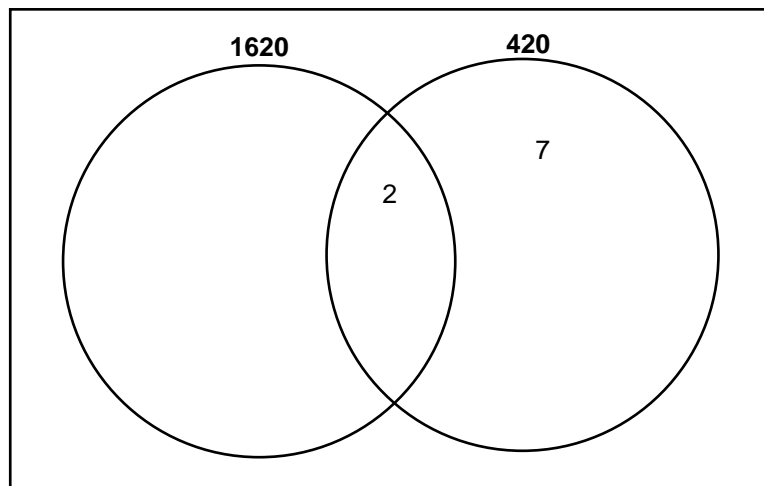
4(b) Write 420 as a product of its prime factors.

[2 marks]

Answer _____

4(c) Use your answer to part 4(a) and 4(b) to complete the Venn Diagram below

[2 marks]



Question continues on next page

4(d) Find the HCF of 1620 and 420.

[1 mark]

Answer _____

4(e) Find the LCM of 3 and 7.

[1 mark]

Answer _____



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Turn over ►

5 Find the HCF and LCM of 126 and 234

(Level 4)

[3 marks]

HCF = _____

LCM = _____

Turn over for next question

6 x and y are two positive numbers greater than 21

(Level 5)

The HCF of x and y is 21.

The LCM of x and y is 210

Find x and y

[3 marks]

$x =$ _____

$y =$ _____



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7 Find the HCF and LCM of $10a^2b^3c$ and $5ab^2cd$

(Level 5)

[3 marks]

HCF = _____

LCM = _____

End of questions