



## Foundation / Higher Tier

# HCF and LCM

### Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*
- You must **show all your working.**
- Diagrams are **NOT** accurately drawn, unless otherwise indicated.
- If your calculator does not have a  $\pi$  button, take the value of  $\pi$  to be 3.142 unless the question instructs otherwise.

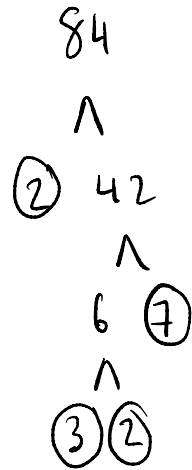
### Information

- The marks for **each** question are shown in brackets- *use this as a guide as to how much time to spend on each question.*

### Advice

- Read each question carefully before you start to answer it.
  - Keep an eye on the time.
  - Try to answer every question.
  - Check your answers if you have time at the end.
-

1. Write 84 as a product of prime factors.

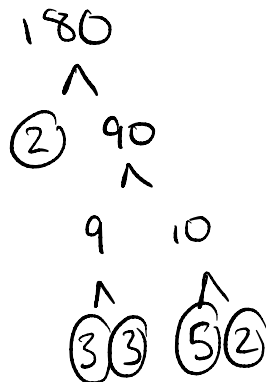


$$2^2 \times 3 \times 7$$

---

(Total for Question 1 is 2 marks)

2. Write 180 as a product of prime factors.

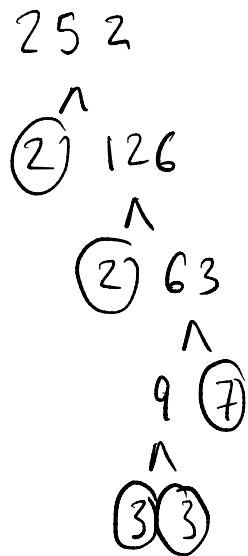


$$3^2 \times 2^2 \times 5$$

---

(Total for Question 2 is 2 marks)

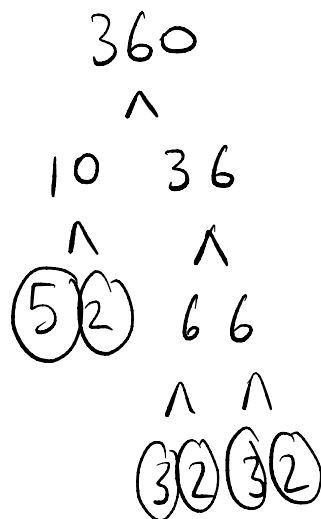
3. Write 252 as a product of prime factors.



$$3^2 \times 2^2 \times 7$$

(Total for Question 3 is 2 marks)

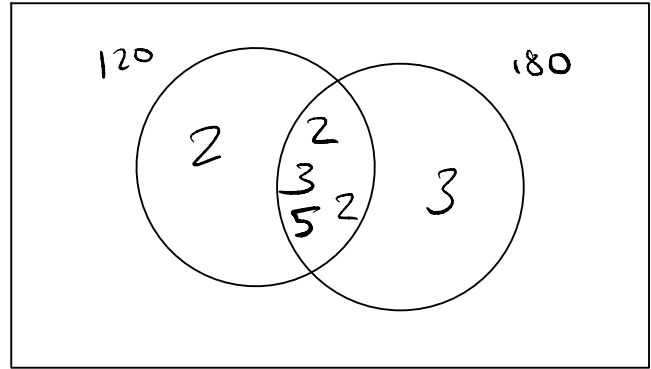
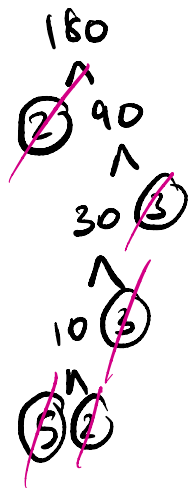
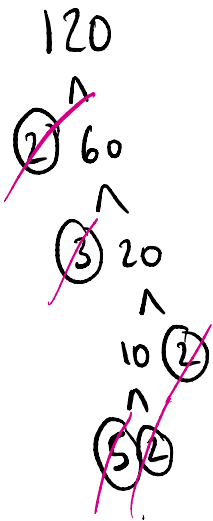
4. Write 360 as a product of prime factors.



$$2^3 \times 3^2 \times 5$$

(Total for Question 4 is 2 marks)

5. Find the HCF and LCM of 120 and 180.

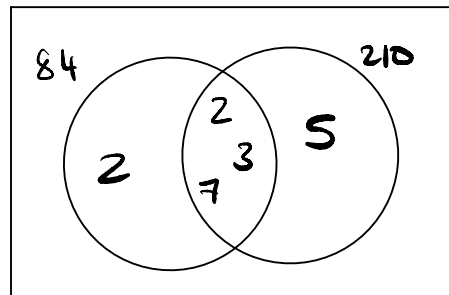
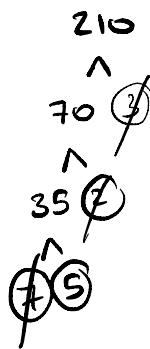
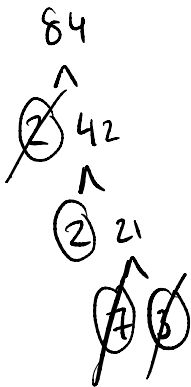


$$\text{HCF} = 2 \times 3 \times 5 \times 2 = \underline{\underline{60}}$$

$$\text{LCM} = 2 \times 3 \times 60 = \underline{\underline{360}}$$

(Total for Question 5 is 3 marks)

6. Find the HCF and LCM of 84 and 210.

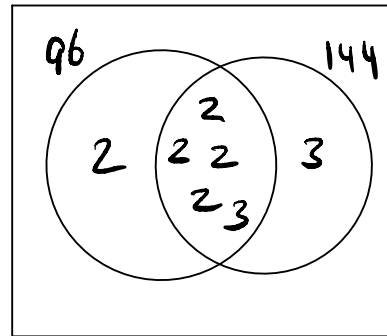
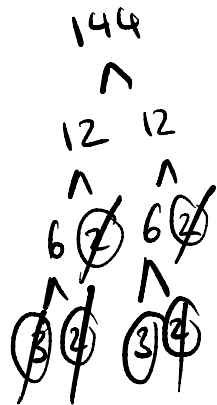
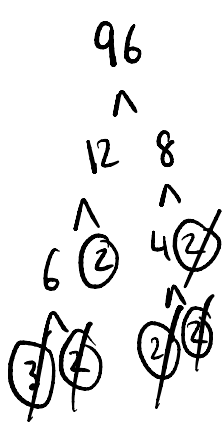


$$\text{HCF} = 2 \times 3 \times 7 = \underline{\underline{42}}$$

$$\text{LCM} = 2 \times 5 \times 42 = \underline{\underline{420}}$$

(Total for Question 6 is 3 marks)

7. Find the HCF and LCM of 96 and 144.

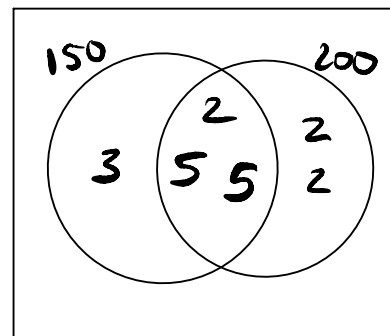
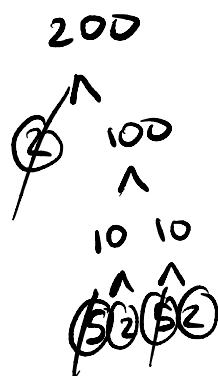
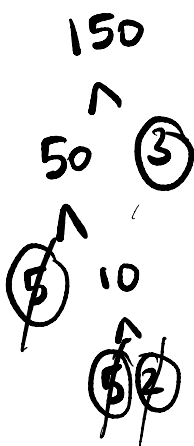


$$\text{HCF} = 2 \times 2 \times 2 \times 2 \times 3 = 48$$

$$\text{LCM} = 2 \times 3 \times 48 = 288$$

(Total for Question 7 is 3 marks)

8. Find the HCF and LCM of 150 and 200.



$$\text{HCF} = 5 \times 5 \times 2 = 50$$

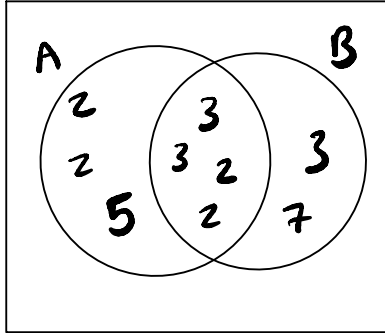
$$\text{LCM} = 3 \times 2 \times 2 \times 50 = 600$$

(Total for Question 8 is 3 marks)

9.  $A = 2^4 \times 3^2 \times 5$

$B = 2^2 \times 3^3 \times 7$

Find the HCF and LCM of A and B



$$\text{HCF} = 3^2 \times 2^2$$

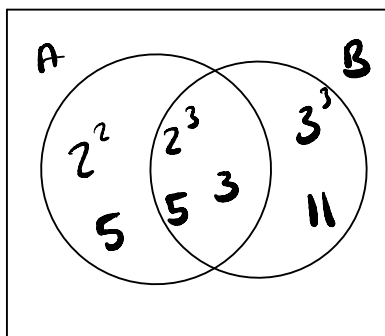
$$\text{LCM} = 2^4 \times 3^3 \times 5 \times 7$$

.....  
(Total for Question 9 is 3 marks)

10.  $A = 2^5 \times 3 \times 5^2$

$B = 2^3 \times 3^4 \times 5 \times 11$

Find the HCF and LCM of A and B



$$\text{HCF} = 2^3 \times 3 \times 5$$

$$\text{LCM} = 2^5 \times 3^4 \times 5^2 \times 11$$

.....  
(Total for Question 10 is 3 marks)