

# Answers For Sheet.

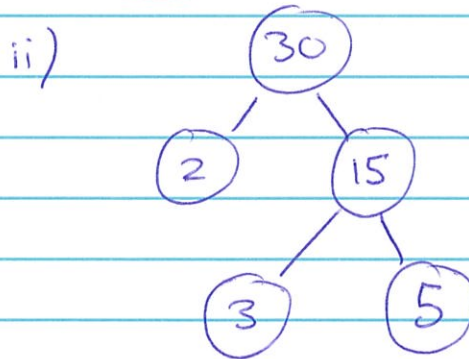
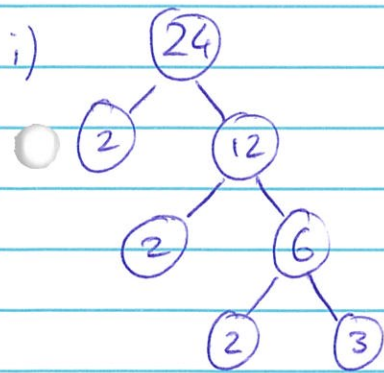
## Factor Lists. (Page 4 - 2.0.1)

- i) 1, 24  
2, 12  
3, 8  
4, 6
- ii) 1, 30  
2, 15  
3, 10  
5, 6
- iii) 1, 48  
2, 24  
3, 16  
4, 12  
6, 8
- iv) 1, 84  
2, 42  
3, 28  
4,

- v) 1, 96  
2, 48  
3, 32  
4, 24  
6, 16  
8, 12
- vi) 1, 221  
13, 17
- vii) 1, 210  
2, 105  
3, 70  
5, 42  
6, 35  
7, 30  
10, 21

## Factor Trees

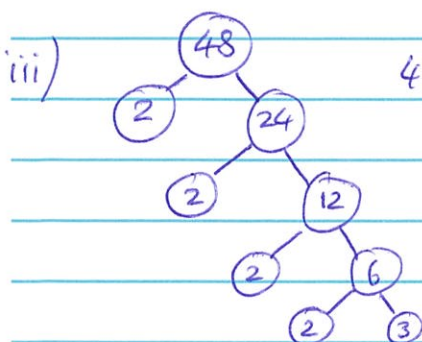
Page 4 2.0.1



$$24 = 2 \times 2 \times 2 \times 3$$

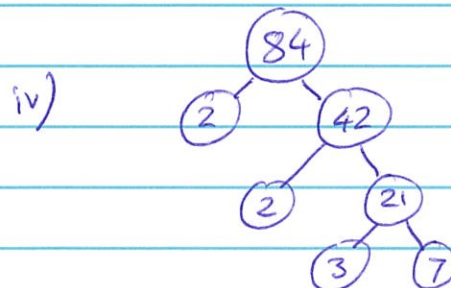
$$= 2^3 \times 3$$

$$30 = 2 \times 3 \times 5$$



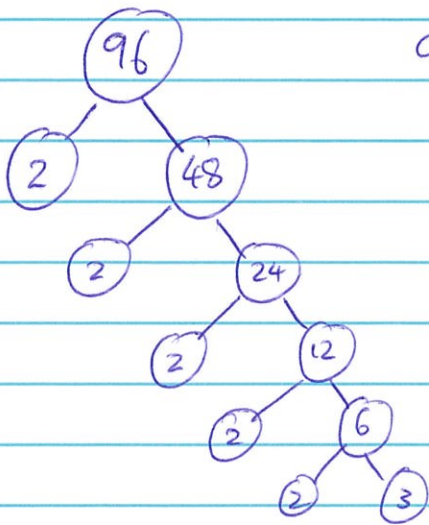
$$48 = 2 \times 2 \times 2 \times 2 \times 3$$

$$= 2^4 \times 3$$



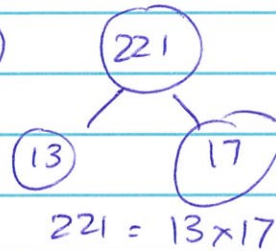
$$84 = 2 \times 2 \times 3 \times 7 = 2^2 \times 3 \times 7$$

v)



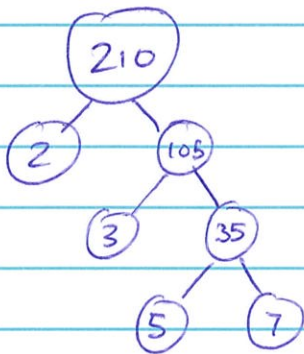
$$96 = 2^5 \times 3$$

vi)



$$221 = 13 \times 17$$

vii)



$$210 = 2 \times 3 \times 5 \times 7$$

Highest Common Factor: Page 5  $\rightarrow 3 \cdot 1 \cdot 1$

i) 48, 54

Factors 48

1 48  
2 24  
3 16  
4 12  
6 8

Factors 54

1 54  
2 27  
3 18  
6 9

$$\text{HCF}(48, 54) = 6$$

ii) 96 120

Factors 96

1, 96  
2, 48  
3, 32  
4, 24  
6, 16  
8, 12

Factors 120

1, 120  
2, 60  
3, 40  
4, 30  
5, 24  
6, 20  
8, 15  
10, 12

$$\text{HCF}(96, 120) = 24$$



iii) Factors 64

1, 64  
2, 32  
~~4~~, 16  
8, 8

Factors 32

1, 32  
2, 16  
4, 8

HCF (64, 32)

iv) Factors 120

1, 120  
2, 60  
3, 40  
4, 30  
5, 24  
6, 20  
8, 15  
10, 12

Factors 160

1, 160  
2, 80  
4, 40  
8, 20  
10, 16

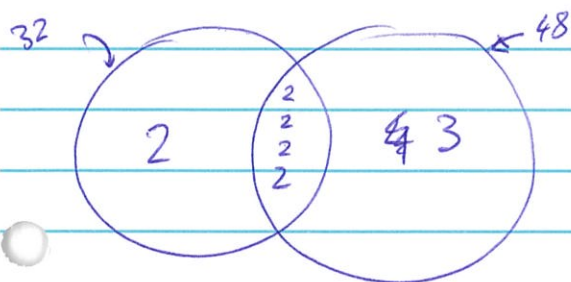
HCF (120, 160) = 40

HCF Venn Diagrams

Page 5

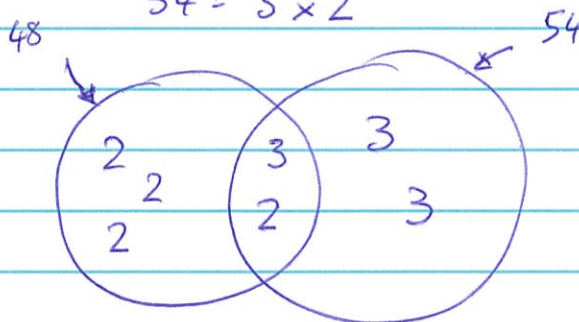
3 · 2 · 1

i)  $32 = 2^5$   
 $48 = 2^4 \times 3$



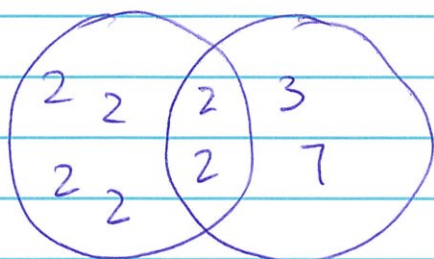
HCF (32, 48) =  $2 \times 2 \times 2 \times 2$   
= 16

ii)  $48 = 2^4 \times 3$   
 $54 = 3^3 \times 2$



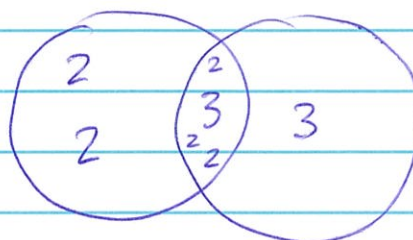
HCF (48, 54) =  $3 \times 2$   
= 6

iii)  $64 = 2^6$   
 $84 = 2^2 \times 3 \times 7$



HCF (64, 84) =  $2 \times 2 = 4$

iv)  $72 = 2^3 \times 3^2$   
 $96 = 2^5 \times 3$



HCF (72, 96) =  $2^3 \times 3$   
= 24

LCM

Page 6

4.1.1

i) 15, (30), 45      LCM (15, 10) = 30  
10, 20, (30)

ii) 20 40 60 80 100 (120) 140      LCM (20, 24) = 120  
24 48 72 96 (120) 144

iii) 16, 32, 48, 64, 80, 96, (112)      LCM (16, 28) = 112  
28, ~~52~~, 56, 84, (112)

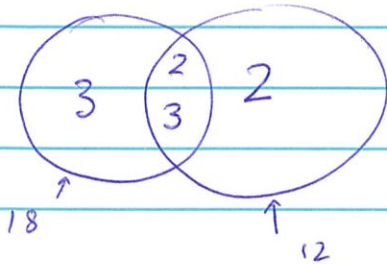
iv) 14, 28, (42), 56, 70      LCM (14, 21) = 42  
21, (42), 63

v) 19, 38, 57, 76, 95, (114)  
6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84, 90, 96, 102, 108, (114)  
LCM (19, 6) = 114

# LCM Venn Diagrams.

4.2.1

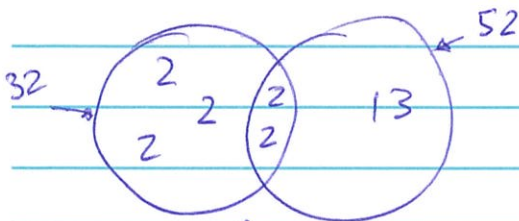
i)  $12 = 2^2 \times 3$   
 $18 = 2 \times 3^2$



$$\text{LCM}(12, 18) = 3 \times 3 \times 2 \times 2 = 36$$

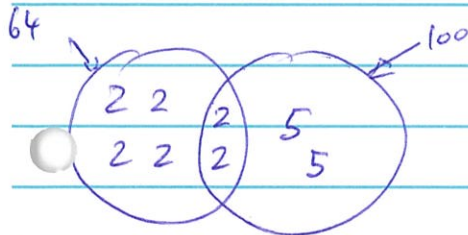
ii)  $32 = 2^5$   
 $52 = 2^2 \times 13$

$$\text{LCM}(32, 52) = 2 \times 2 \times 2 \times 2 \times 2 \times 13 = 416$$



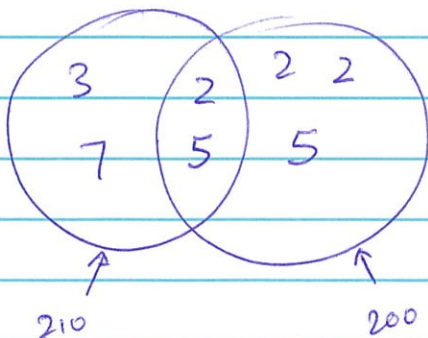
iii)  $64 = 2^6$   
 $100 = 5^2 \times 2^2$

$$\text{LCM}(64, 100) = 1600$$



iv)  $210 = 2 \times 3 \times 5 \times 7$   
 $200 = 2^3 \times 5^2$

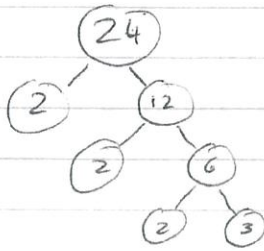
$$\text{LCM}(210, 200) = 3 \times 7 \times 2 \times 5 \times 2 \times 2 \times 5 = 4200$$



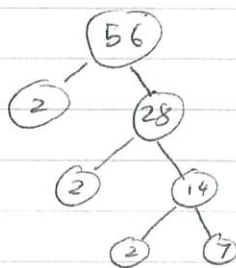


# Page 9 Set 1 Solutions.

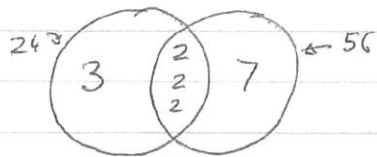
1 a)



$$24 = 2 \times 2 \times 2 \times 3$$

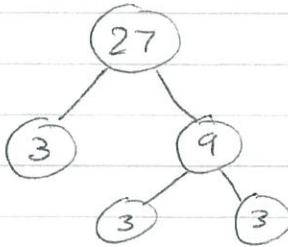


$$56 = 2 \times 2 \times 2 \times 7$$

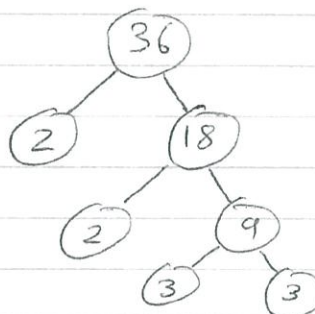


$$\text{HCF} = 2 \times 2 \times 2 = 8$$

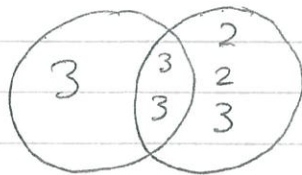
b ii)



$$27 = 3 \times 3 \times 3$$

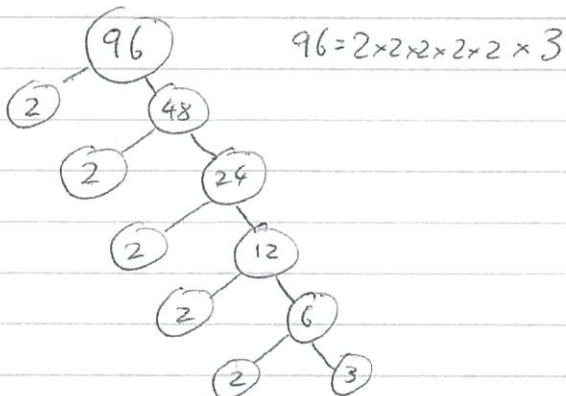


$$36 = 2 \times 2 \times 3 \times 3$$

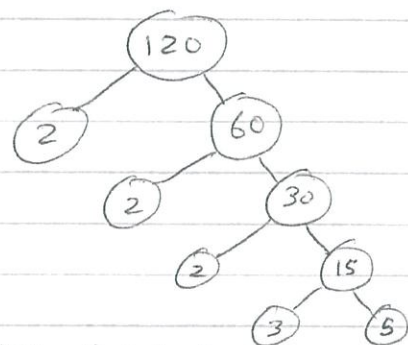


$$\text{HCF}(27, 36) = 3 \times 3 = 9$$

c ii)

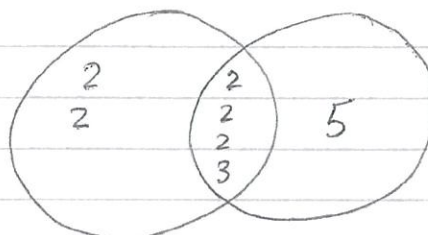


$$96 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$$



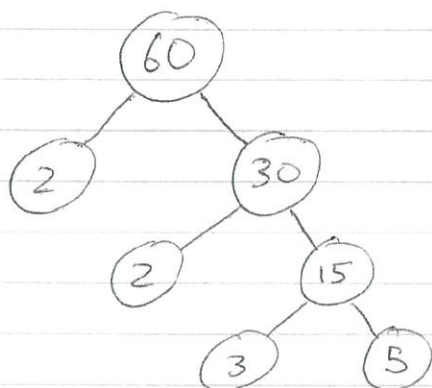
$$120 = 2 \times 2 \times 2 \times 3 \times 5$$

96

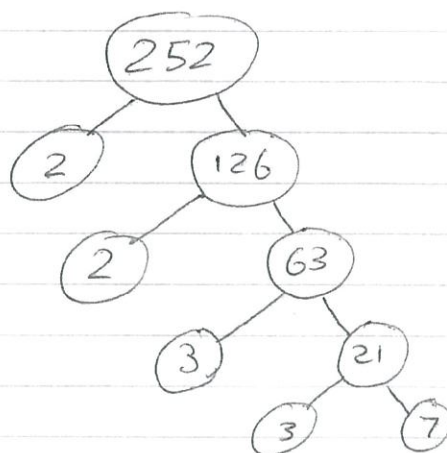


$$\text{HCF}(96, 120) = 24$$

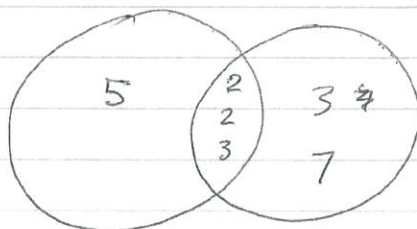
d iv)



$$60 = 2 \times 2 \times 3 \times 5$$



$$252 = 2 \times 2 \times 3 \times 3 \times 7$$



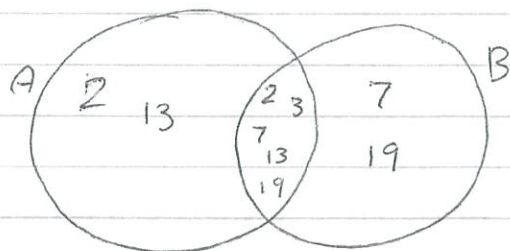
$$\text{HCF}(60, 252) = 2 \times 2 \times 3 = 12$$

2 ii)

A: 2, 2, 3, 7, 13, 13, 19  
B: 2, 3, 7, 7, 13, 19, 19

$$A = 269,724$$

$$B = 1,379,742$$



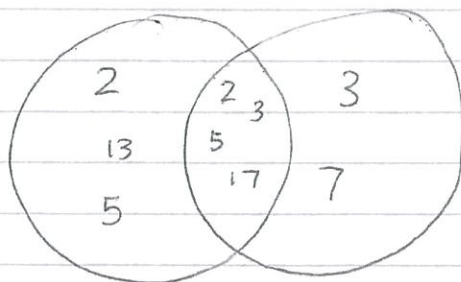
$$\text{HCF}(A, B) = 10,374$$

3 ii)

A: 2, 2, 3, 5, 13, 17, 5  
B: 2, 3, 3, 5, 17, 7

$$A = 66,300$$

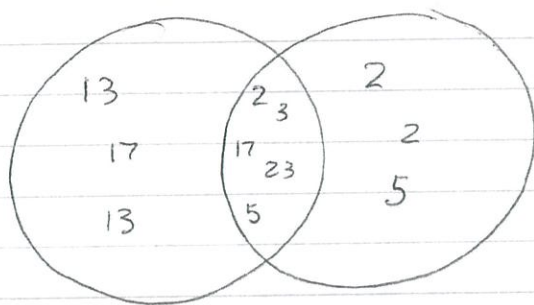
$$B = 10,710$$



$$\text{HCF}(A, B) = 510$$

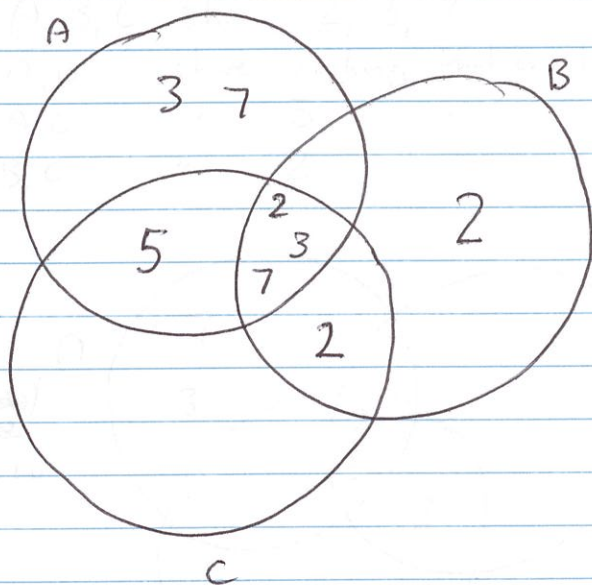
b) A: 2, 3, 13, 17, 17, 23, 13, 5  
 B: 17, 3, 23, 5, 2, 2, 2, 5

A = 33,700,290  
 B = 234,600



$HCF(A, B) = 11730$

4) A =  $2 \times 3 \times 3 \times 5 \times 7 \times 7 = 4410$   
 B =  $2 \times 2 \times 2 \times 3 \times 7 = 168$   
 C =  $2 \times 2 \times 3 \times 5 \times 7 = 420$



$HCF(A, B, C) = 2 \times 3 \times 7$   
 $= 42$

$LCM[A, B, C] = 3 \times 7 \times 5 \times (2 \times 3 \times 7) \times 2 \times 2$   
 $= 17640$