

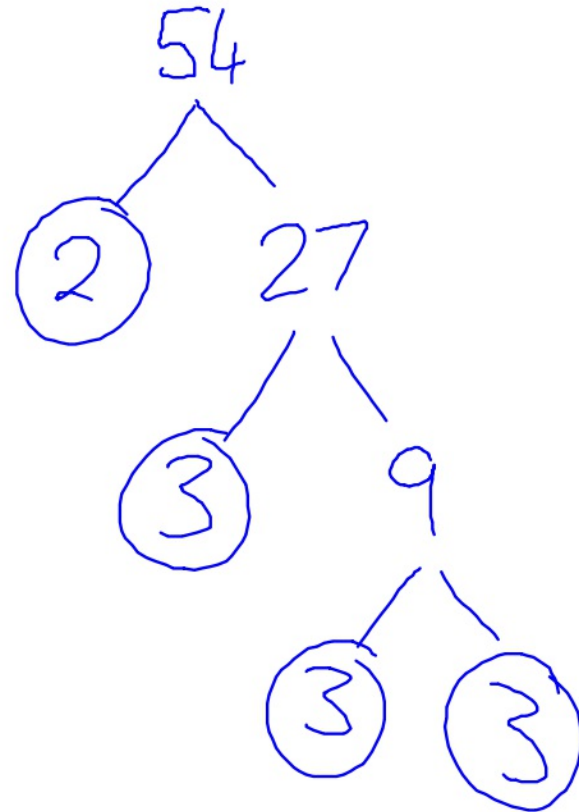
N21 Product of Prime Factors

OCR

15 (a) Write 54 as the product of its prime factors.

(a) **[2]**

15 (a) Write 54 as the product of its prime factors.



(a) $2 \times 3 \times 3 \times 3$ [2]

11 $A = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 7$
 $B = 2 \times 2 \times 3 \times 3 \times 5 \times 5 \times 7$

(a) Write A using index notation.

(a)[1]

(b) Show that the highest common factor (HCF) of A and B is 1260. [2]

(c) Show that B is larger than A, **without working them out.** [2]

11 $A = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 7$
 $B = 2 \times 2 \times 3 \times 3 \times 5 \times 5 \times 7$

(a) Write A using index notation.

(a) $2^4 \times 3^2 \times 5 \times 7$ [1]

(b) Show that the highest common factor (HCF) of A and B is 1260. [2]

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

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

$$2 \times 2 \times 3 \times 3 \times 5 \times 7$$

$$= 1260$$

(c) Show that B is larger than A, without working them out. [2]

$$A = 2^4 \times 3^2 \times 5 \times 7 = 4$$

$$B = 2^2 \times 3^2 \times 5^2 \times 7 = 5$$

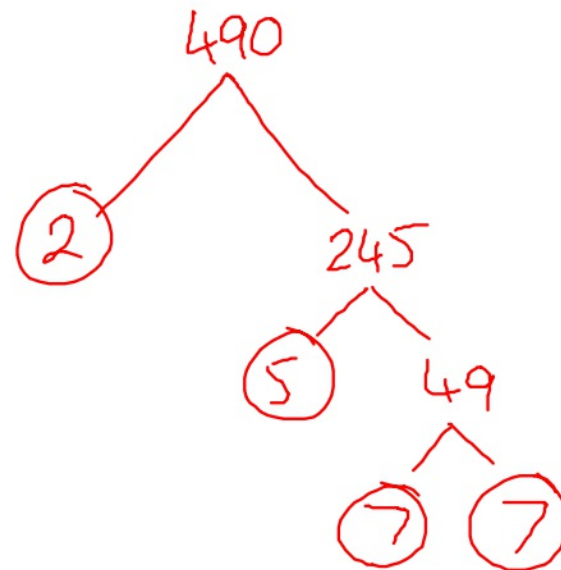
B must be bigger.

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18 (a) Write 490 as the product of its prime factors.

(a) **[2]**

18 (a) Write 490 as the product of its prime factors.



$$245 \div 5$$

(a) $2 \times 5 \times 7 \times 7$ [2]
or
 $2 \times 5 \times 7^2$

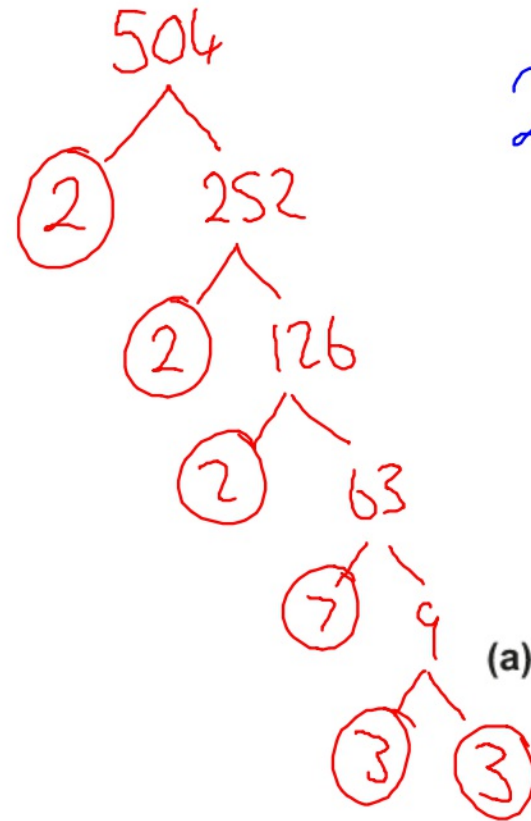
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3 (a) Write 504 as the product of its prime factors.

(a) **[3]**

3 (a) Write 504 as the product of its prime factors.

N21



(a)

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

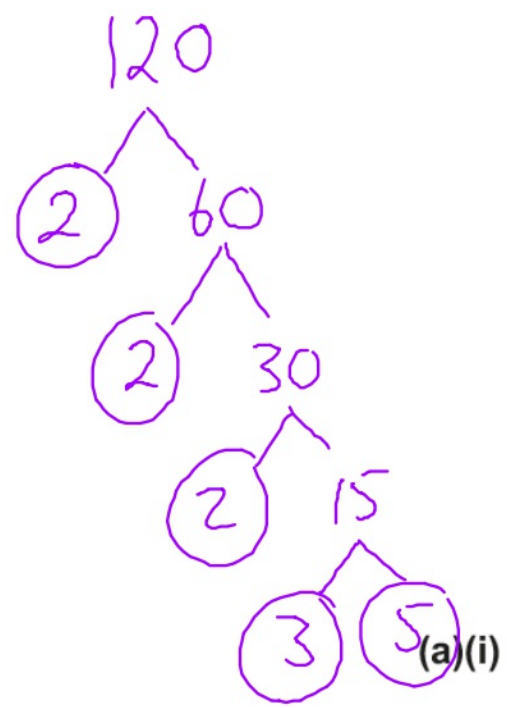
$$2^3 \times 3^2 \times 7$$

[3]

3 (a) (i) Write 120 as a product of its prime factors.

(a)(i) **[3]**

3 (a) (i) Write 120 as a product of its prime factors.



$$2 \times 2 \times 2 \times 3 \times 5 \checkmark$$

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

(a)(i) [3]

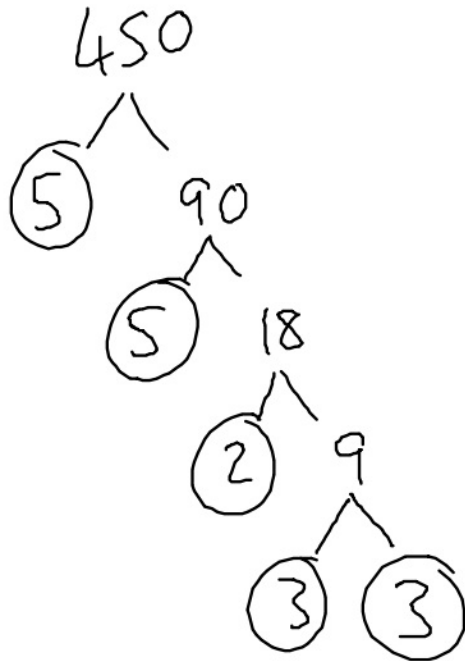
(b) (i) Write 450 as a product of its prime factors.

N21

(b)(i) **[3]**

(b) (i) Write 450 as a product of its prime factors.

N21

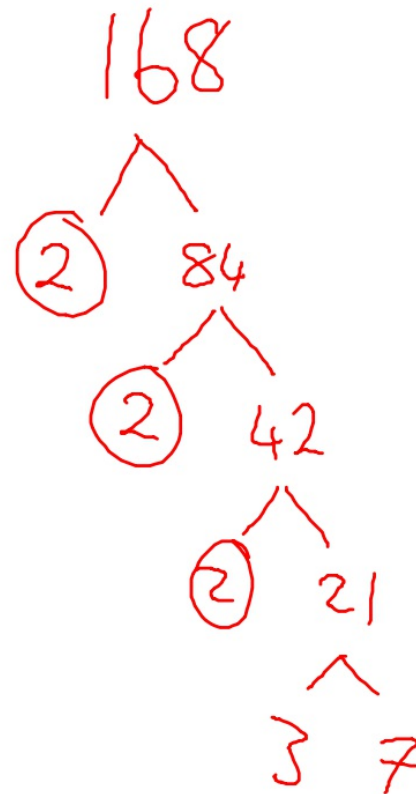


(b)(i) $2 \times 3^2 \times 5^2$ [3]

Edexcel

- 19 (a) Write 168 as a product of its prime factors.
You must show your working.

- (a) Write 168 as a product of its prime factors.
You must show your working.



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

(3)

21 Write 136 as a product of its prime factors.

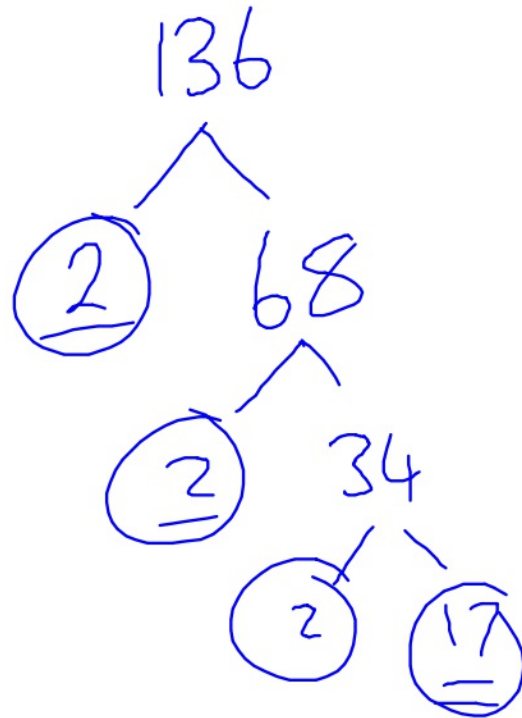
N21

.....
(Total for Question 21 is 3 marks)

21 Write 136 as a product of its prime factors.

$$\begin{array}{r} 068 \\ 2 \overline{)136} \\ \underline{264} \\ 72 \\ \underline{72} \\ 0 \end{array}$$

N21



$$2 \times 2 \times 2 \times 17$$

(Total for Question . is 3 marks)

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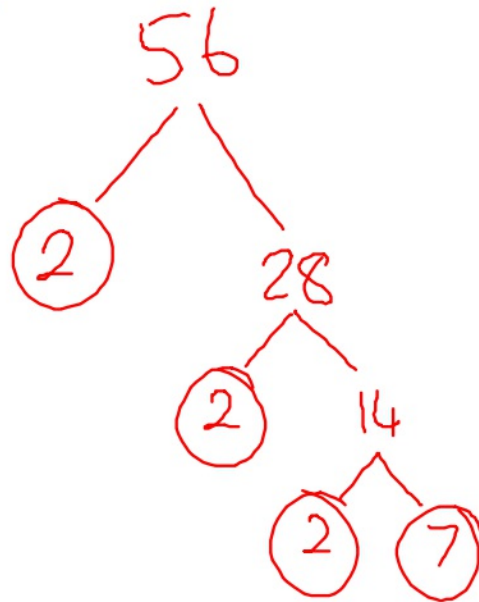
22 Express 56 as the product of its prime factors.

.....
(Total for Question 22 is 2 marks)

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22 Express 56 as the product of its prime factors.

x



$$2 \times 2 \times 2 \times 7$$

$$\text{or } 2^3 \times 7 \checkmark$$

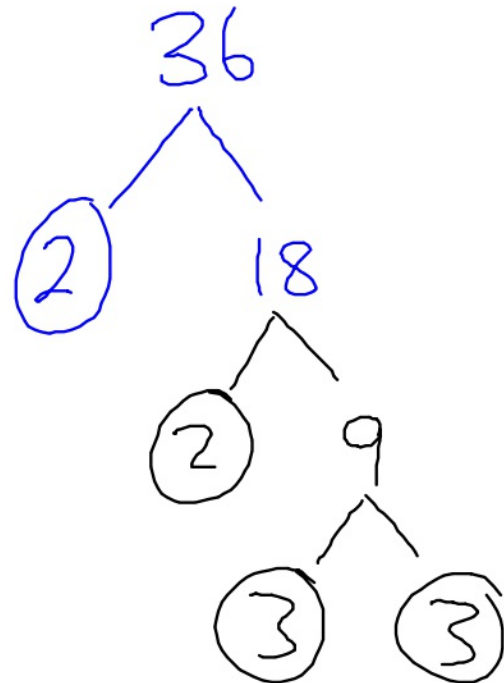
(Total for Question 22 is 2 marks)

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23 Write 36 as a product of its prime factors.

.....
(Total for Question 23 is 2 marks)

23 Write 36 as a product of its prime factors.



1 2 3 4 5 6 7 8 9

Prime

$$2 \times 2 \times 3 \times 3 \checkmark$$
$$2^2 \times 3^2 \checkmark$$

(Total for Question 23 is 2 marks)

AQA

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26 Write 36 as a product of prime factors.

N21 Give your answer in index form.

[3 marks]

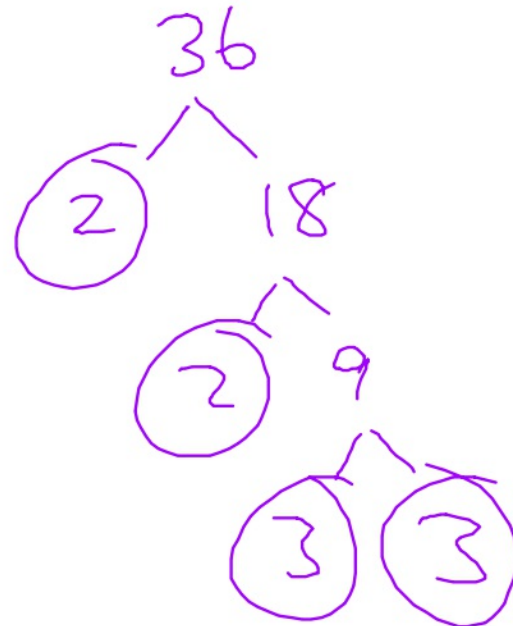
Answer _____

Write 36 as a product of prime factors.

N21

Give your answer in index form.

[3 marks]



Answer $2^2 \times 3^2$

21

N is a number.

As a product of prime factors in index form $N = 2 \times 3^4 \times y^3$

N18

N21

Work out $3N^2$ as a product of prime factors in index form.

Give your answer in terms of y .

[3 marks]

Answer _____

21

N is a number.

As a product of prime factors in index form $N = 2 \times 3^4 \times y^3$

N18

N21

Work out $3N^2$ as a product of prime factors in index form.

Give your answer in terms of y .

[3 marks]

$$N^2 = (2^1 \times 3^4 \times y^3) \times (2^1 \times 3^4 \times y^3)$$

$$N^2 = 2^2 \times 3^8 \times y^6$$

$$3N^2 = 2^2 \times 3^8 \times y^6 \times 3$$

Answer

$$\underline{2^2 \times 3^9 \times y^6} \checkmark$$