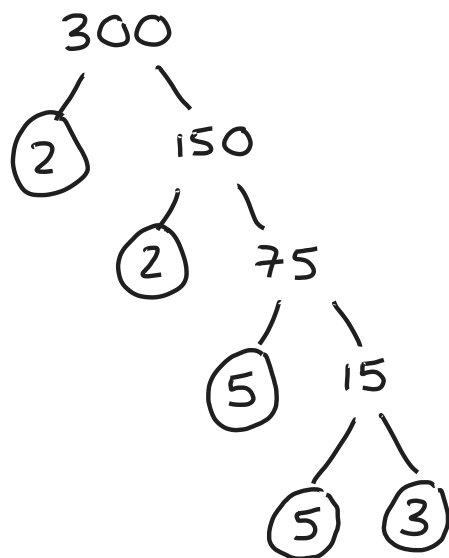


- 8 (a) Write 300 as a product of its prime factors.
Show your working clearly.



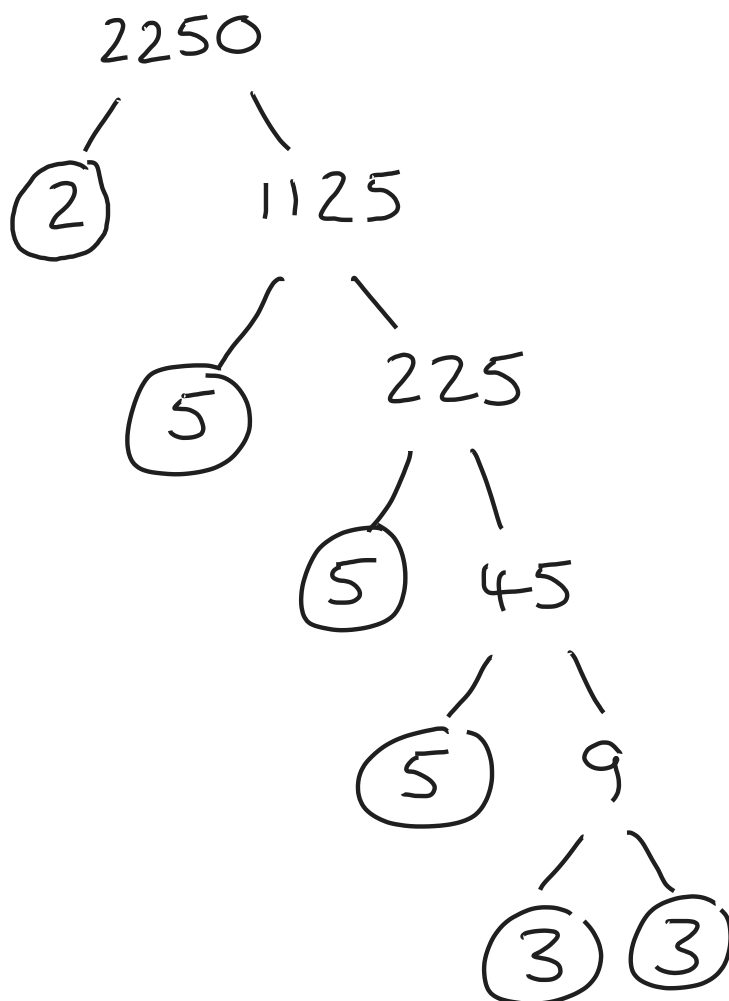
LOTS OF ROUTES ARE
POSSIBLE BUT ALL
SHOULD END UP WITH
THE SAME FACTORS
AND POWERS

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

(2)



- 1 Write 2250 as a product of powers of its prime factors.
Show your working clearly.

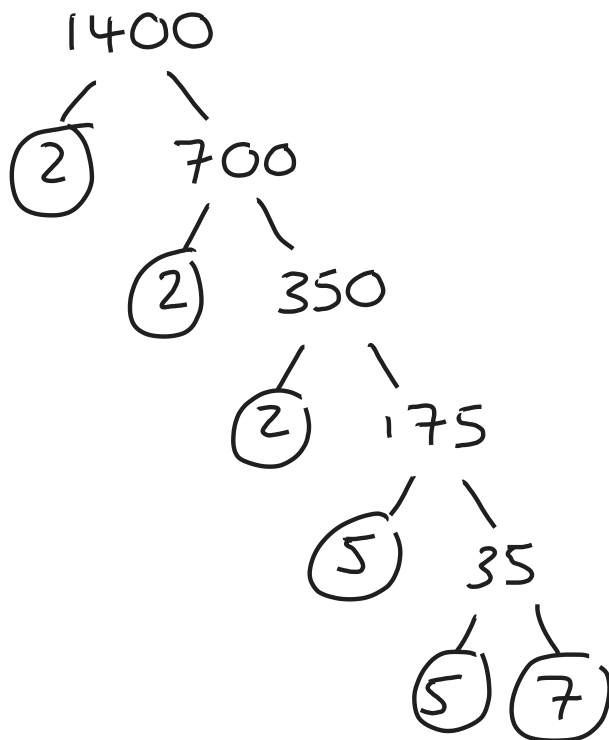


$$2 \times 3^2 \times 5^3$$

(Total for Question 1 is 3 marks)



- 1 Write 1400 as a product of powers of its prime factors.
Show your working clearly.

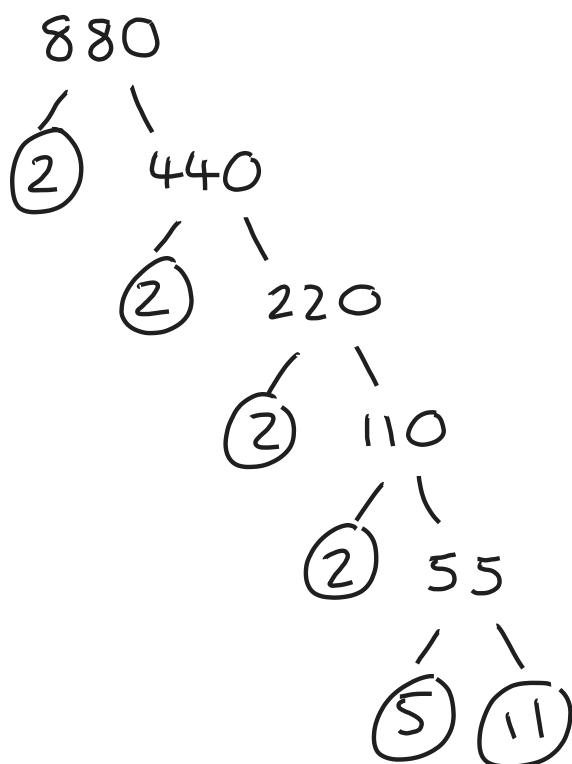


$$2^3 \times 5^2 \times 7$$

(Total for Question 1 is 3 marks)



- 2 Write 880 as a product of powers of its prime factors.
Show your working clearly.

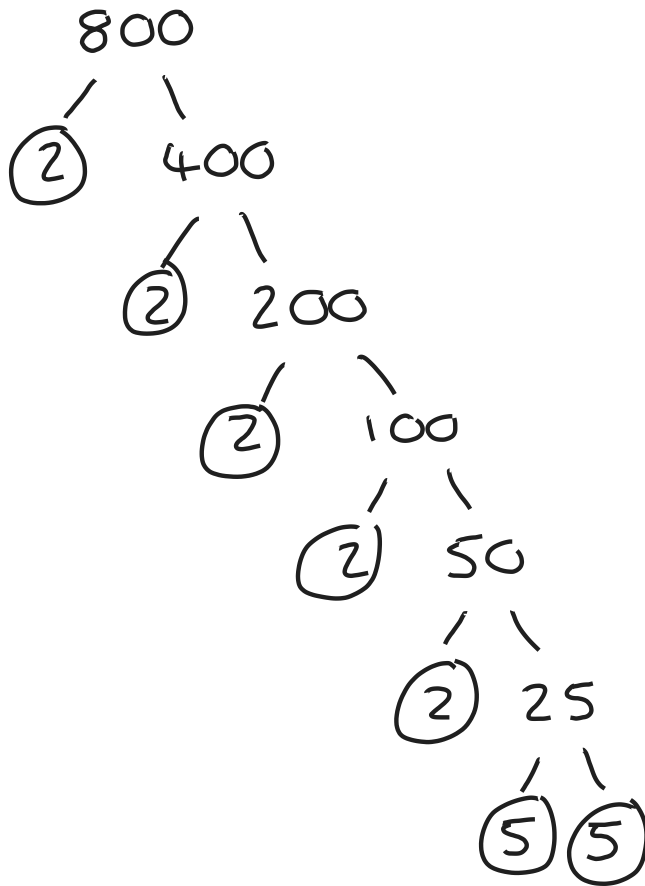


$$2^4 \times 5 \times 11$$

(Total for Question 2 is 3 marks)



- 1 (b) Write 800 as a product of its prime factors.
Show your working clearly.

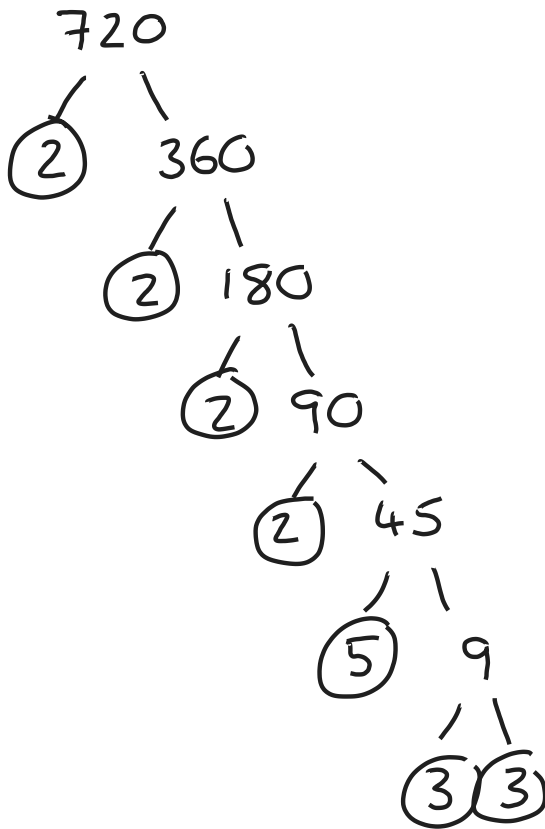


$$2^5 \times 5^2$$

(2)



- 5 (a) Write 720 as a product of its prime factors.
Show your working clearly.



$$\underline{2^4 \times 3^2 \times 5}$$

(3)

- (b) Find the smallest whole number that 720 can be multiplied by to give a square number.

$$720 \times 2 = 1440$$

$$\sqrt{1440} = 37.9$$

$$720 \times 3 = 2160$$

$$\sqrt{2160} = 46.4$$

$$720 \times 4 = 2880$$

$$\sqrt{2880} = 53.6$$

$$720 \times 5 = 3600$$

$$\sqrt{3600} = 60$$

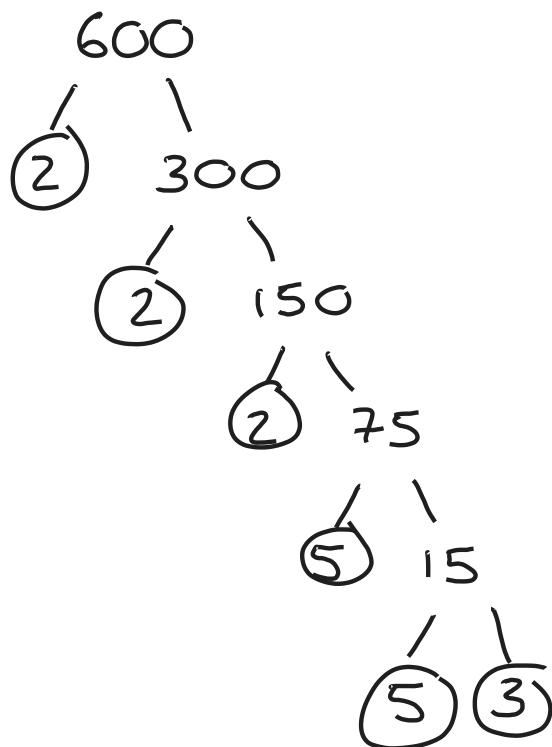
5

(1)

(Total for Question 5 is 4 marks)



- 1 Write 600 as a product of powers of its prime factors.
Show your working clearly.

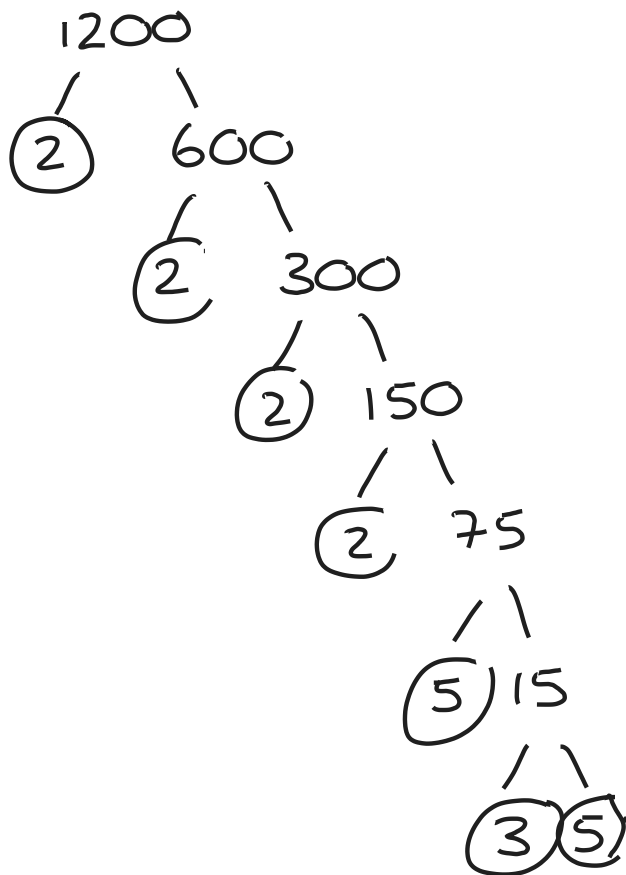


$$2^3 \times 3 \times 5$$

(Total for Question 1 is 3 marks)



- 2 Write 1200 as a product of powers of its prime factors.
Show your working clearly.



$$2^4 \times 3 \times 5^2$$

(Total for Question 2 is 3 marks)

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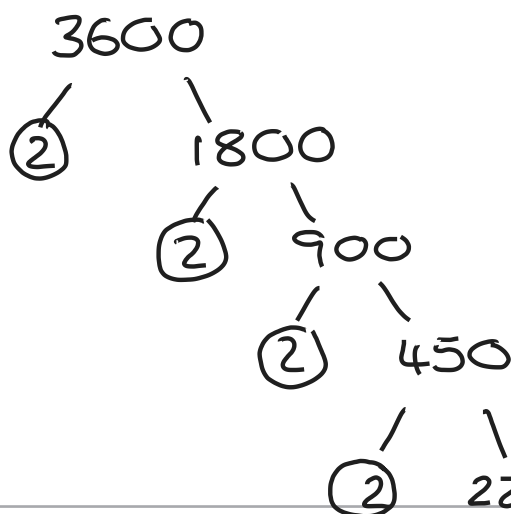
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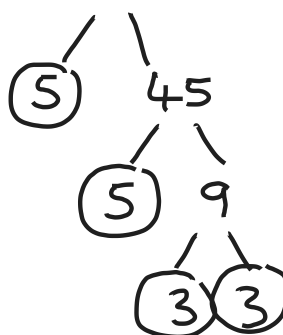
- 7 Write 3.6×10^3 as a product of powers of its prime factors.
Show your working clearly.

$$3.6 \times 10^3 = 3600$$



$$2^4 \times 3^2 \times 5^2$$

(Total for Question 7 is 3 marks)



10 $A = 2^n \times 3 \times 5^m$

Write $8A$ as a product of powers of its prime factors.

$$8 = 2 \times 2 \times 2 = 2^3$$

$$A = 2^n \times 3 \times 5^m$$

$$8A = 2^3 \times 2^n \times 3 \times 5^m$$

$$8A = 2^{n+3} \times 3 \times 5^m$$

(Total for Question 10 is 2 marks)

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9 $N = 480 \times 10^9$

(a) Write N as a number in standard form.

$$480 \times 10^9 = 480 \text{ } 000 \text{ } 000 \text{ } 000$$

$$= 4.8 \times 10^{11}$$

(1)

(b) Write N as a product of powers of its prime factors.

Show your working clearly.

$$480000000000000$$

$$2 \quad 240000000000000$$

$$2 \quad 120000000000000$$

$$2 \quad 60000000000000$$

$$2 \quad 3000000000000$$

$$2 \quad 1500000000000$$

$$2 \quad 750000000000$$

$$2 \quad 375000000000$$

$$2 \quad 187500000000$$

$$2 \quad 93750000000$$

$$2 \quad 4687500000$$

$$2 \quad 234375000$$

$$2 \quad 117187500$$

$$2 \quad 58593750$$

$$2 \quad 29296875$$

$$5 \quad 5859375$$

$$5 \quad 1171875$$

$$5 \quad 234375$$

$$5 \quad 46875$$

$$5 \quad 9375$$

$$5 \quad 1875$$

$$5 \quad 375$$

$$5 \quad 75$$

$$5 \quad 15$$

$$5 \quad 3$$

$$2^{14} \times 3 \times 5^{10}$$

(3)

(c) Find the largest factor of N that is an odd number.

$$29296875$$

(1)

(Total for Question 9 is 5 marks)

