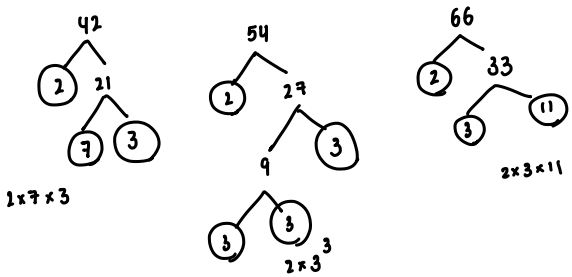

HCF,LCM

1. Find, showing your working clearly,
   (i) the lowest common multiple (LCM) of $42, 54$ and 66
   (ii) the highest common factor (HCF) of $42, 54$ and 66



i) LCM = $2 \times 7 \times 3^3 \times 11$
= 4158

ii) HCF = 2×3
= 6

(i) LCM =
(ii) HCF =

2.

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

(i) Find the Lowest Common Multiple (LCM) of A and B.

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

$= 12600$

(ii) Find the Highest Common Factor (HCF) of A and B.

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

$= 60$

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

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

(a) Find the highest common factor (HCF) of A and B.

(b) Find the lowest common multiple (LCM) of A and B

(c) Find the least number that A must be multiplied by to give a square number.

$C = 3 \times 10^{205} \times 5 \times 10^{205}$.

(d) Work out the value of C, giving your answer as a number in standard form.

a) HCF = $2 \times 3^2 \times 5$

= 90

b) LCM = $2^3 \times 3^4 \times 5^2 \times 7 \times 11$

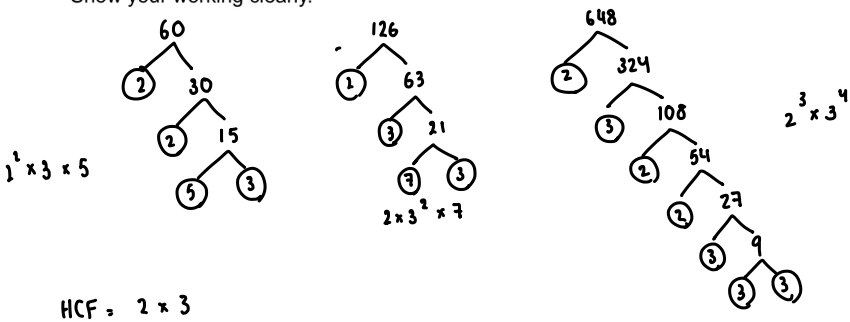
= 1247400

c) $C = 3 \times 10^{205} \times 5 \times 10^{205}$

$= 15 \times 10^{410}$

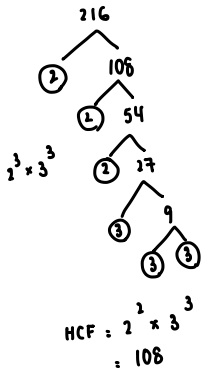
d) $15 \times 10^{410} = 1.5 \times 10^{411}$

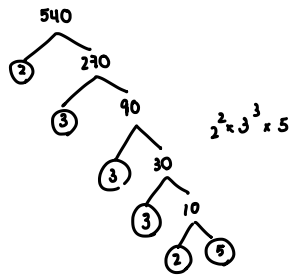
4. Find the highest common factor (HCF) of $60, 126$ and 648
Show your working clearly.



HCF = 2×3
$= 6$

5. Find the Highest Common Factor (HCF) of 216 and 540
You must show all your working.





HCF : $2^2 \times 3^3$
: 108

6.

$$A = 2^3 \times 3^2 \times 5^4$$
$$B = 2^2 \times 3^3 \times 5^n$$

Given that the Lowest Common Multiple (LCM) of A and B is $3\,375\,000$ find the value of the integer n.
Show your working clearly.

$LCM = 3\,375\,000$

$3\,375\,000 = 2^3 \times 3^3 \times 5^n$

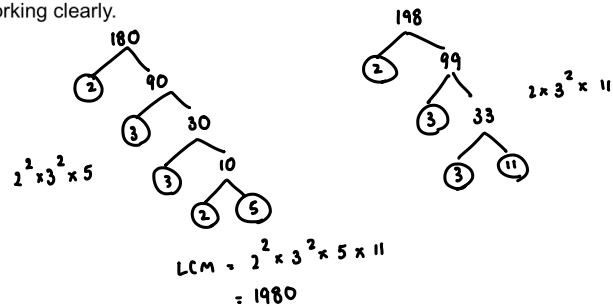
$5^n = \frac{3375\,000}{216}$

$5^n = 15\,625$

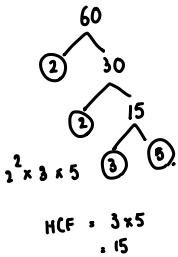
$n = \log_5 15\,625$

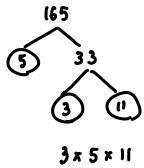
$n = 6$

7. Find the Lowest Common Multiple (LCM) of 180 and 198
Show your working clearly.



8. Find the Highest Common Factor (HCF) of 60 and 165
Show your working clearly.





9.

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

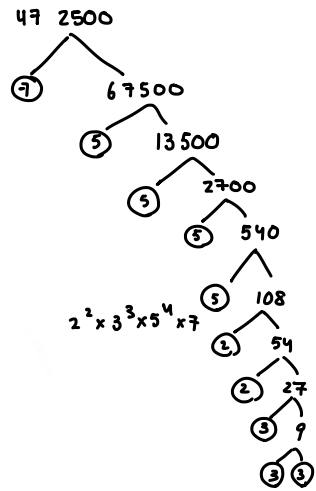
Find the lowest common multiple (LCM) of $2A$ and $7B$
Give your answer as a product of prime factors.

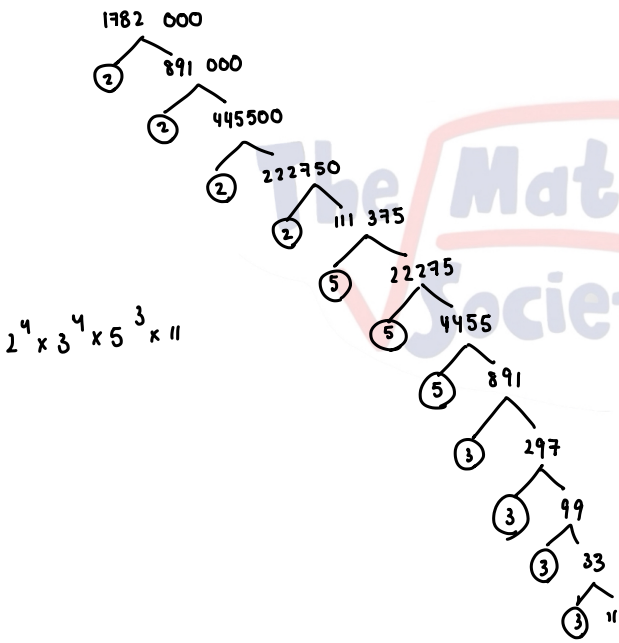
$2A = 2(2^3 \times 3^4 \times 5^3 \times 11)$

$= 1782\ 000$ ←

$7B = 7(2^2 \times 3^3 \times 5^4)$

$= 47\ 2500$





$LCM = 2^4 \times 3^4 \times 5^4 \times 7 \times 11$