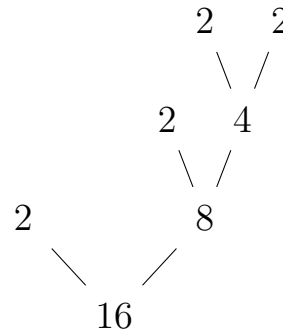
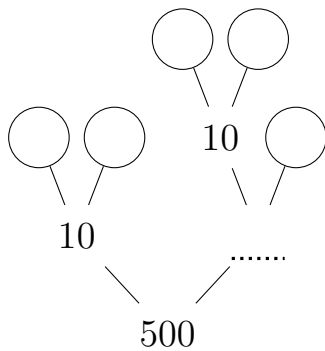


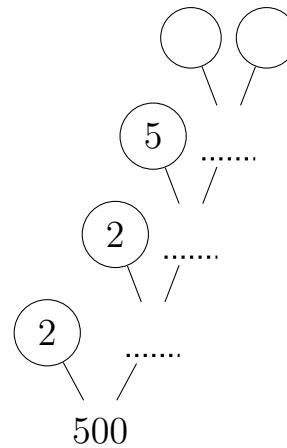
1. Here is a prime factor tree.
  - (i) Circle the leaves (prime factors)



- (ii) Write 16 as a product of its prime factors
2. Jarvis uses an “easy first” strategy to draw his prime factor trees. Kai uses a “smallest prime first” strategy to draw his prime factor trees. Both boys have drawn incomplete prime factor trees.

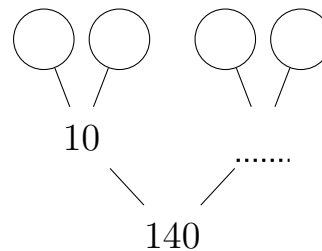


Jarvis's prime factor tree

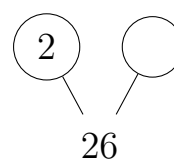


Kai's prime factor tree

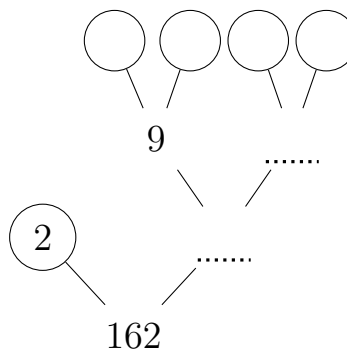
- Complete **either** Jarvis's **or** Kai's prime factor tree.
3. (a) Complete this prime factor tree.



- (b) Complete this prime factor tree.



4. (i) Complete this prime factor tree.



(ii) Write 162 as a product of its prime factors.

5. Students ONLY need to be able divide by 2 or 10 without a calculator

Write 700 as a product of its prime factors

6. Students ALSO need to be able divide by 9 (up to 81) without a calculator  
AND know  $9 = 3 \times 3$  without a calculator

Write 216 as a product of its prime factors

7. Students ALSO need to be able to divide by 3 and 5 without a calculator

Write 330 as a product of its prime factors

8. (a) Write 75 as a product of its prime factors.

(b) Find the Highest Common Factor (HCF) of 60 and 75

9. Given that  $E = 2^3 \times 3^5 \times 5$  and  $F = 2^4 \times 3 \times 5^2$   
write down, as a product of powers of its prime factors,

- (i) the highest common factor (HCF) of  $E$  and  $F$
- (ii) the lowest common multiple (LCM) of  $E$  and  $F$ .

10. (i) Complete: 1 is **not** a prime number because mathematicians decided its quicker to write

- *all the ..... numbers than*
- *all the prime numbers except 1*

(ii) Draw the prime factor trees for all the **non prime** numbers from 1 and 10

(iii) Write a list of the prime numbers between 1 and 10 .....

11. (i) Draw the prime factor trees for all the **non prime** numbers from 11 and 20

(ii) Write a list of the prime numbers between 11 and 20 .....

14. Students **ALSO** need to be able to divide by other primes e.g. 7 and 11 and 13 etc.  
AND students need to reason about which primes to try to divide by.

Write 195 as a product of its prime factors