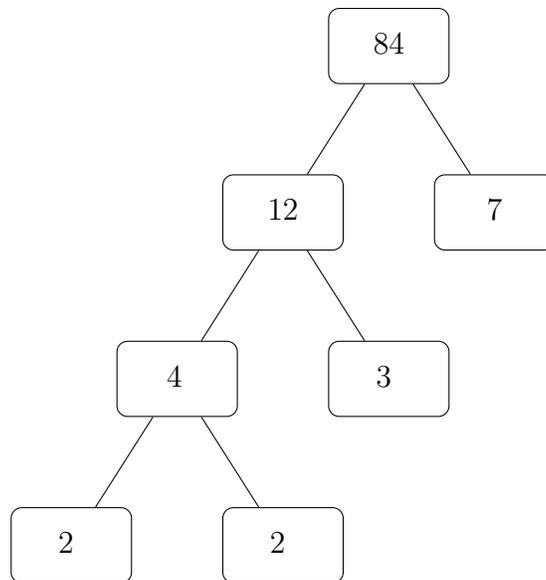


Prime Factorization Practice

Directions:

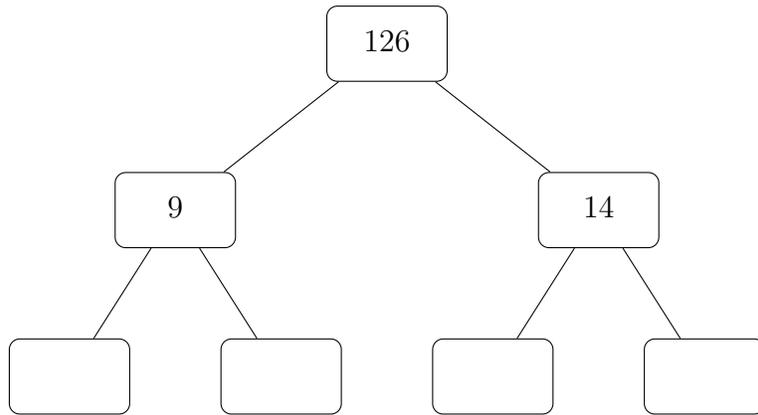
1. **Start with the number at the top.** Each problem shows a number at the top of a factor tree. This is the number you will factor.
2. **Split the number into two factors.** You can choose any two numbers that multiply to the root number. If the number is already prime, it does not need to split further. If a branch is composite, continue splitting until all branches end with prime numbers.
3. **Fill in the blanks.** Each empty box in the tree is a place for you to write a factor. Make sure your factors multiply to the parent number.
4. **Write the final prime factorization.** At the bottom of each tree, write the number as a product of prime numbers, using exponents if necessary. Example: $84 = 2^2 \cdot 3 \cdot 7$
5. **Tips:** - Check your multiplication at each split. - Remember, primes are numbers greater than 1 that have no divisors other than 1 and themselves. - This activity will help you see that every number has a unique prime factorization.

1. 84



$$84 = \underline{2^2} \times 3 \times 7$$

2. 126



126 = _____

3. 180

-

180 = _____

4. 45

$$45 = \underline{\hspace{2cm}}$$

5. 360

$$360 = \underline{\hspace{2cm}}$$

Reflection:

If two students start their factor trees differently, will they always end with the same prime factorization? Why or why not?