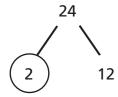
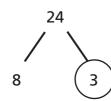
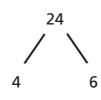
Write a number as a product of its prime factors



a) Complete the factor trees for the number 24

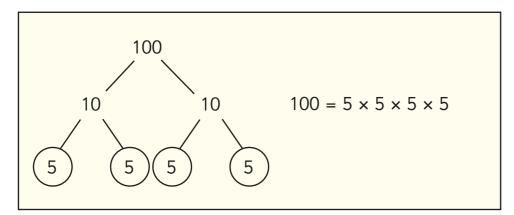






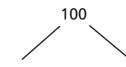
b) What is 24, as a product of its prime factors?

- c) Discuss with a partner what you notice about your factor trees in part a).
- Scott completes a factor tree for the number 100



a) What mistake has he made?

b) Correct Scott's mistake.



Complete a factor tree for each number.

Write each number as a product of its prime factors.

a)

80

b)

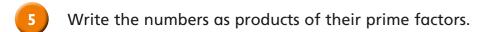
68

a) What number could replace the question mark in the factor tree?

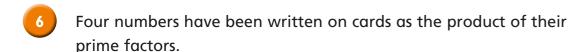


b) Discuss your answer with a partner. Is there more than one solution?

c) Write 72 as a product of its prime factors.

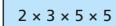


What do you notice about your answers?



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

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



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



The greatest number is the second card, as that has the most prime factors.

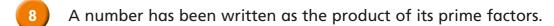
a) Do you agree with Whitney? ______

Explain your answer.

b) Write the numbers in ascending order.

Dani works out $450 = 2 \times 3 \times 3 \times 5 \times 5$

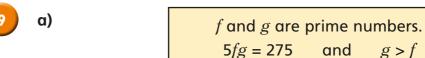
Use this information to write these numbers as a product of their prime factors.



The answer is $2^2 \times 3 \times 11^2$

Is 66 a factor of this number?

Explain how you know.



What is the value of g?

b)
$$192 = 2^a b$$
a and b are prime numbers.

Find the values of a and b.

c)

495 can be written as $c^2 de$.

What are the values of c, d and e?

$$c = \boxed{ d = } e = \boxed{ }$$

$$A = 5^2 \times 7^2 \times 11^3 \times 13$$

$$B = 5^2 \times 7^3 \times 11^3 \times 13$$

How many times greater is B than A?

Explain how you know.

