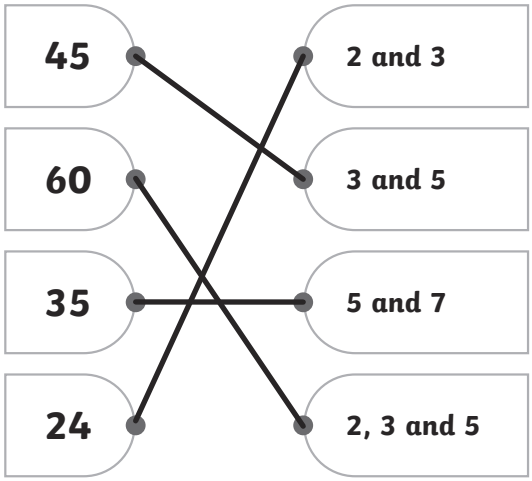
1)



2) **103** is a prime number.

86 is double a prime number.

7 is a prime factor of 28 and 35.

88 is the product of: 2 × 2 × 2 × 11

3) 9 = **3 × 3**

18 = **2 × 3 × 3**

36 = **2 × 2 × 3 × 3**

81 = **3 × 3 × 3 × 3**

1) **Harry is correct.**
However you create the tree, the prime factors will always be 2 × 2 × 2 × 2 × 3 = 48.
Children should prove this with examples of different factor trees.

2) **The statement is incorrect as 2 × 2 × 2 × 2 × 2 = 32 and the greatest number out of all of the cards is 150 which is the calculation 2 × 3 × 5 × 5.**

1) **a)** a = **2, 4, 16, 8, 32**
b = **32, 16, 8, 4, 2**

b) 64 = **2 × 2 × 2 × 2 × 2 × 2**

2) **Accept any two of the following:**
48, 54, 72, 96

3) **The answer is 210.**
210 = 2 × 3 × 5 × 7

1) Match the numbers with their prime factors.

45	2 and 3
60	3 and 5
35	5 and 7
24	2, 3 and 5

2) Find the number that makes each statement true. Use each number only once.

7	86
88	103

_____ is a prime number.

_____ is double a prime number.

_____ is a prime factor of 28 and 35.

_____ is the product of 2 × 2 × 2 × 11

3) Write the numbers as products of their prime factors.

9 = ☐ × ☐

18 = ☐ × ☐ × ☐

36 = _____

81 = _____

1) Harry has been creating factor trees to find prime factors.

It doesn't matter how you create the tree for number 48. The prime factors will always be the same.

Prove that Harry is correct.

2) Four numbers have been written on cards as the product of their prime factors.

$2 \times 2 \times 3$

$2 \times 3 \times 5$

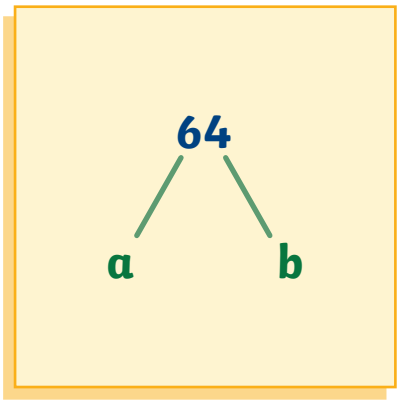
$2 \times 2 \times 2 \times 2 \times 2$

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

The greatest number is $2 \times 2 \times 2 \times 2 \times 2$ as that number has the most prime factors.

Do you agree? Explain your answer.

1) a) Which numbers could be the unknown values in the factor tree below?
Write down all the possible outcomes for a and b.



a	b

b) Write 64 as a product of its prime factors.

64 = _____

2) Find two 2-digit numbers greater than 40 that have 2 and 3 as their only prime factors.

3) I am the smallest number possible that has four different prime factors. Can you find me?

1) Match the numbers with their prime factors.

45	2 and 3
60	3 and 5
35	5 and 7
24	2, 3 and 5

2) Find the number that makes each statement true. Use each number only once.

7 86 88 103

_____ is a prime number.

_____ is double a prime number.

_____ is a prime factor of 28 and 35.

_____ is the product of 2 × 2 × 2 × 11

3) Write the numbers as products of their prime factors.

9 = ☐ × ☐

18 = ☐ × ☐ × ☐

36 = _____

81 = _____

1) Match the numbers with their prime factors.

45	2 and 3
60	3 and 5
35	5 and 7
24	2, 3 and 5

2) Find the number that makes each statement true. Use each number only once.

7 86 88 103

_____ is a prime number.

_____ is double a prime number.

_____ is a prime factor of 28 and 35.

_____ is the product of 2 × 2 × 2 × 11

3) Write the numbers as products of their prime factors.

9 = ☐ × ☐

18 = ☐ × ☐ × ☐

36 = _____

81 = _____

1) Harry has been creating factor trees to find prime factors.

It doesn't matter how you create the tree for number 48. The prime factors will always be the same.

Prove that Harry is correct.

2) Four numbers have been written on cards as the product of their prime factors.

$2 \times 2 \times 3$

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

$2 \times 3 \times 5$

$2 \times 2 \times 2 \times 2 \times 2$

The greatest number is $2 \times 2 \times 2 \times 2 \times 2$ as that number has the most prime factors.

Do you agree?
Explain your answer.

1) Harry has been creating factor trees to find prime factors.

It doesn't matter how you create the tree for number 48. The prime factors will always be the same.

Prove that Harry is correct.

2) Four numbers have been written on cards as the product of their prime factors.

$2 \times 2 \times 3$

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

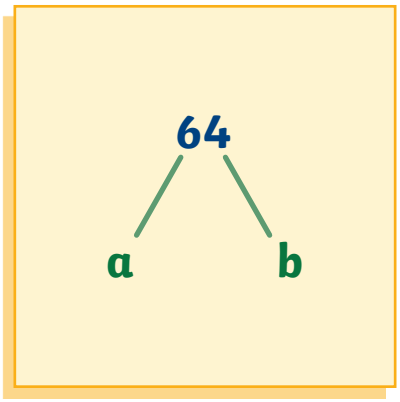
$2 \times 3 \times 5$

$2 \times 2 \times 2 \times 2 \times 2$

The greatest number is $2 \times 2 \times 2 \times 2 \times 2$ as that number has the most prime factors.

Do you agree?
Explain your answer.

1) **a)** Which numbers could be the unknown values in the factor tree below? Write down all the possible outcomes for a and b.



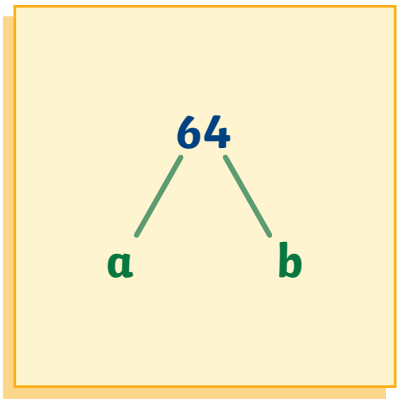
b) Write 64 as a product of its prime factors.

64 = _____

2) Find two 2-digit numbers greater than 40 that have 2 and 3 as their only prime factors.

3) I am the smallest number possible that has four different prime factors. Can you find me?

1) **a)** Which numbers could be the unknown values in the factor tree below? Write down all the possible outcomes for a and b.



b) Write 64 as a product of its prime factors.

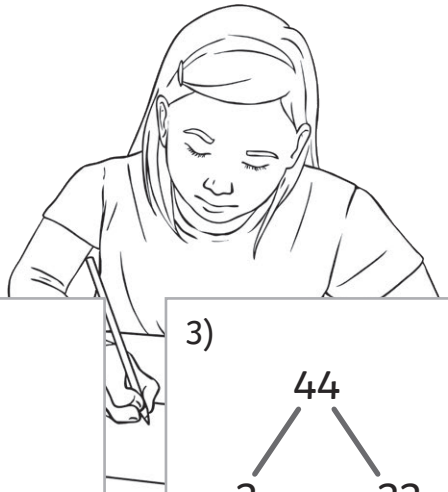
64 = _____

2) Find two 2-digit numbers greater than 40 that have 2 and 3 as their only prime factors.

3) I am the smallest number possible that has four different prime factors. Can you find me?

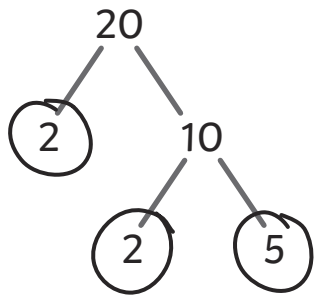
Prime Factors

To find prime factors of 2-digit numbers.

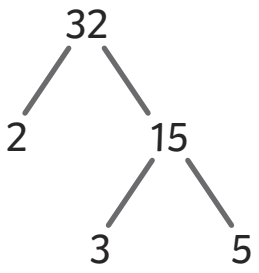


Aneeka has completed some factor trees.
Can you help her by circling the prime factors?
The first one has been done for you.

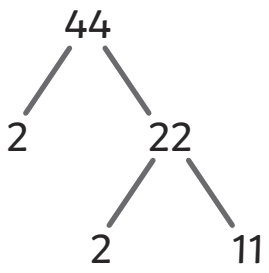
1)



2)

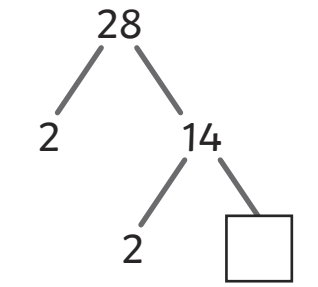


3)

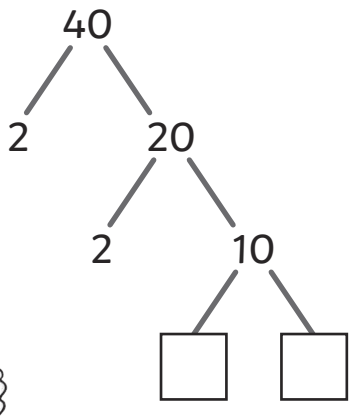


George has tried to complete some factor trees but he has become a little lost along the way.
Could you help him complete his factor trees? Don't forget to circle the prime factors!

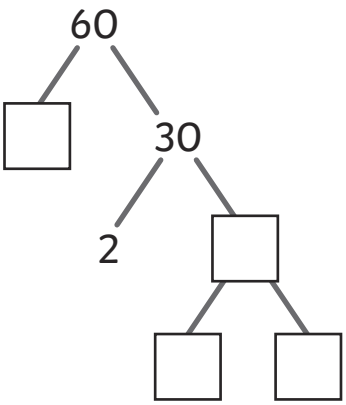
4)



5)



6)

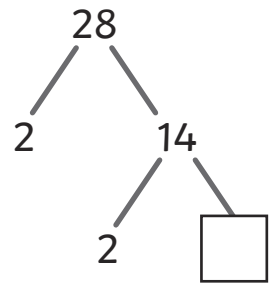


Prime Factors

To find prime factors of 2-digit numbers.

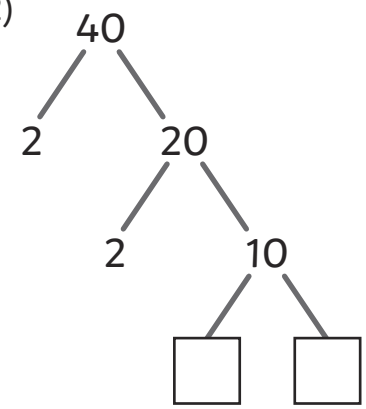
Complete the factor trees and write the calculation to match.
Remember to circle the prime factors.

1)



□ × □ × □ = □

2)



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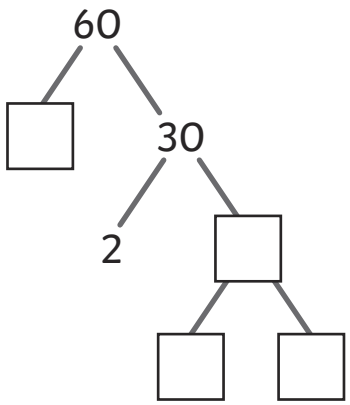
3)

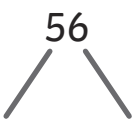


□ × □ × □ × □ = □

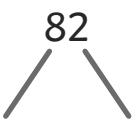
Create factor trees to find the prime factors of the following numbers: **48** **56** **82**
Don't forget to write the matching calculation and circle the prime factors!

4)

5)



6)

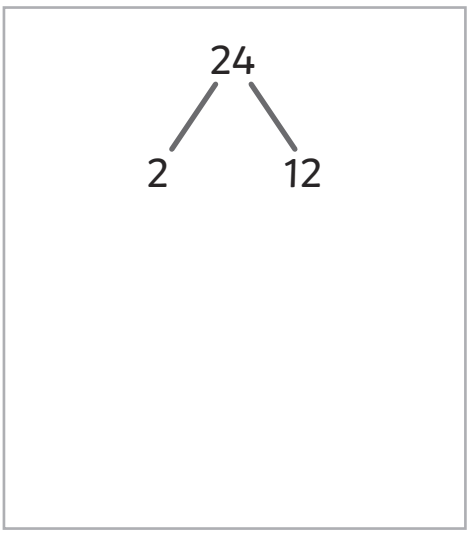


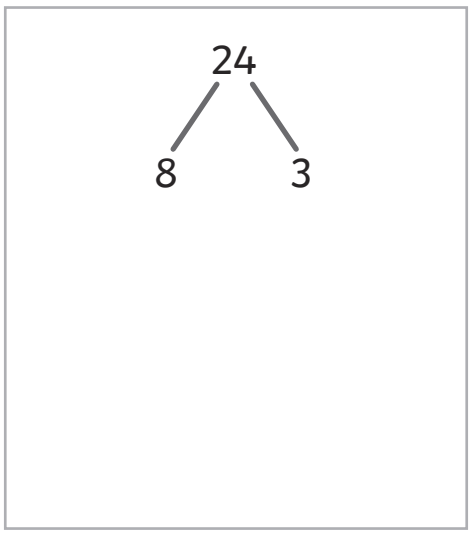
7) Claudia says that there is only one way to create a factor tree for 24.
Do you agree or disagree? Prove your answer.

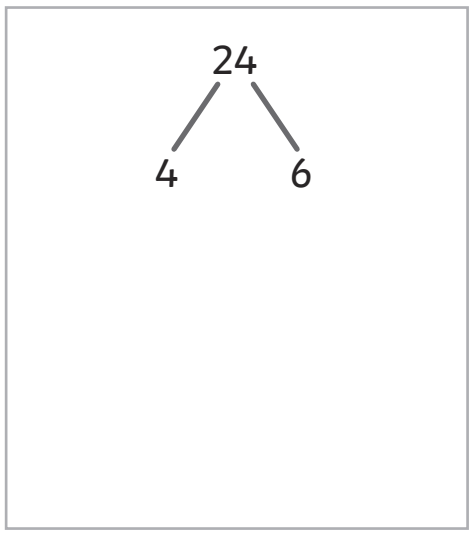
Prime Factors

To find prime factors of 2-digit numbers.

1) a) Complete the factor trees for the number 24.







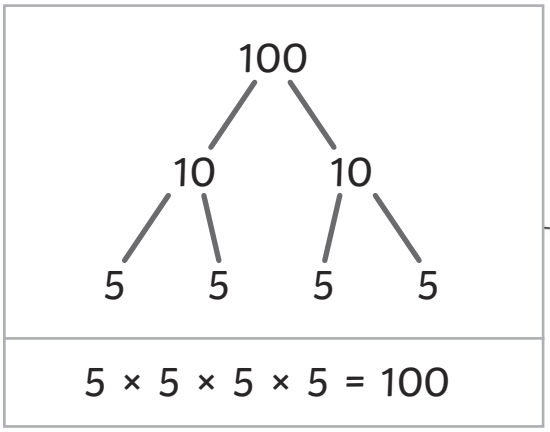
b) What is 24 as a product of its prime factors?

$24 = \square \times \square \times \square \times \square$

c) Isaac says that it is possible to complete one of these factor trees in two different ways. Is he correct? Prove it.

2) Which has more prime factors, 26 or 42? How could you prove it?

3) Abigail has completed a factor tree for the number 100.

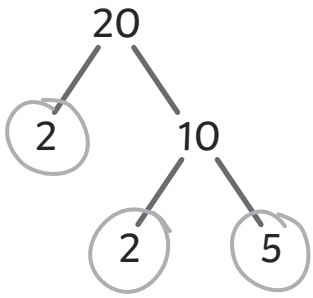


$5 \times 5 \times 5 \times 5 = 100$

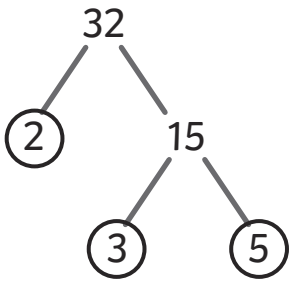
What mistake has she made?

Prime Factors **Answers**

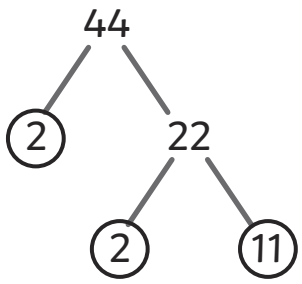
1)



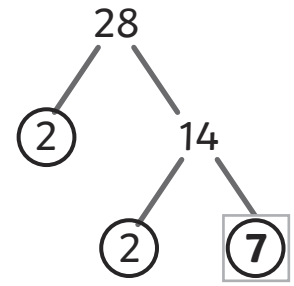
2)



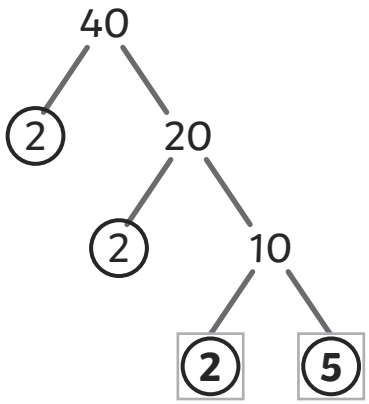
3)



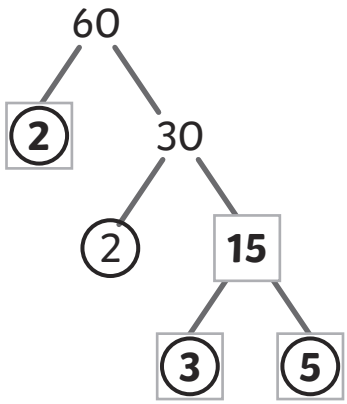
4)



5)

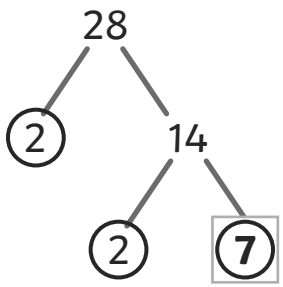


6)



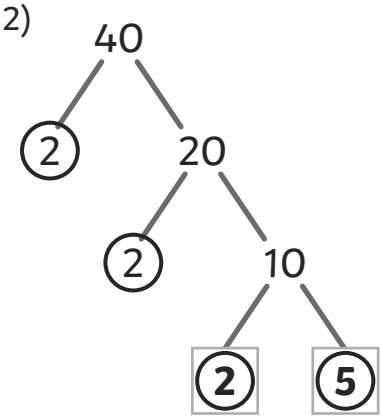
Prime Factors **Answers**

1)



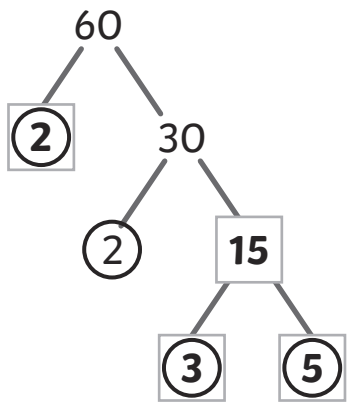
2 × 2 × 7 = 28

2)



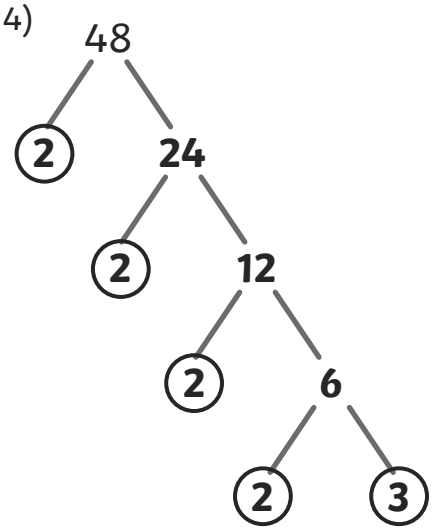
2 × 2 × 2 × 5 = 40

3)



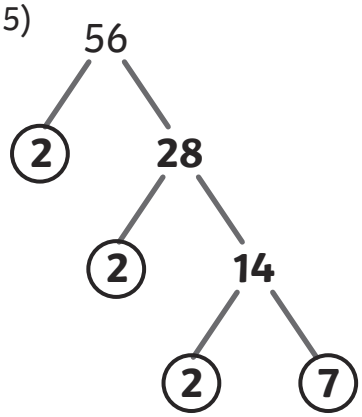
2 × 2 × 3 × 5 = 60

4)



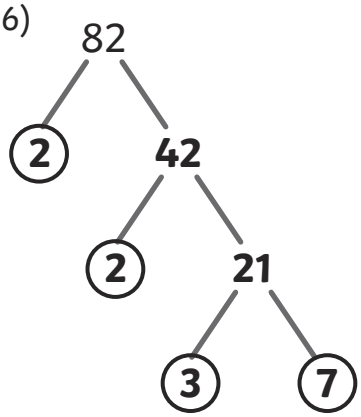
2 × 2 × 2 × 2 × 2 = 48

5)



2 × 2 × 2 × 7 = 56

6)



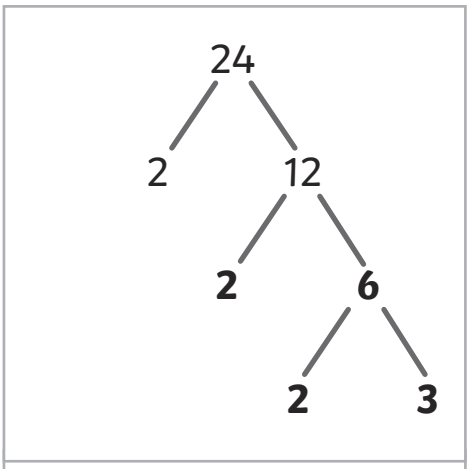
2 × 2 × 3 × 7 = 82

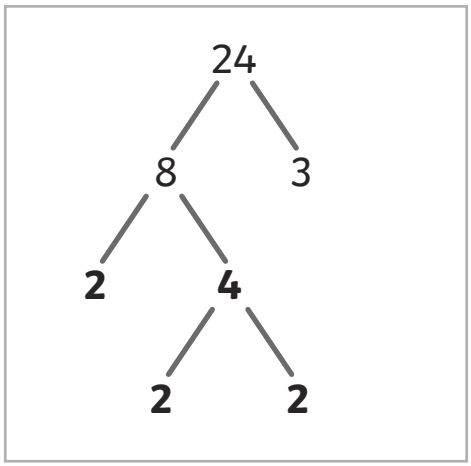
7) Claudia says that there is only one way to create a factor tree for 24.
Do you agree or disagree? Prove your answer.

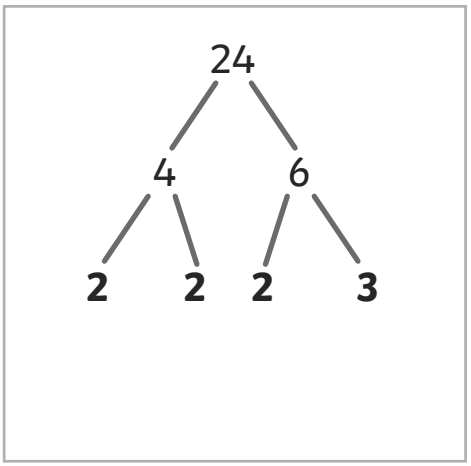
There are three ways. Claudia's first branch could be: 2 and 12, 8 and 3, or 4 and 6.

Prime Factors **Answers**

1) a) Complete the factor trees for the number 24.







Also accept a branch from 12 with factors of 4 and 3, with a branch from 4 showing factors of 2 and 2.

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

$24 = \boxed{2} \times \boxed{2} \times \boxed{2} \times \boxed{3}$

c) Isaac says that it is possible to complete one of these factor trees in two different ways. Is he correct? Prove it.

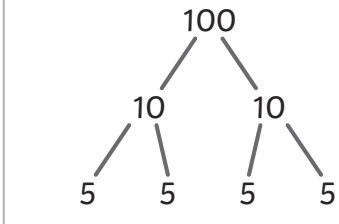
There is more than one way of completing the first tree. You could either create a branch from 12 showing factors of 2 and 6, with a branch from 6 showing factors of 2 and 3; or you could create a branch from 12 showing factors of 4 and 3, with a branch from 4 showing factors of 2 and 2.

2) Which has more prime factors, 26 or 42? How could you prove it?

26 only has 2 and 13 as its prime factors whereas 42 has 2, 3 and 7. Children may prove their answer by drawing a factor tree.

3) Abigail has completed a factor tree for the number 100. What mistake has she made?

Abigail has made a mistake by thinking that 5 × 5 = 10. She probably got confused with adding and multiplying. She has completed her first branches correctly as 10 × 10 = 100. Abigail should have written 2 × 5 for both of her second branches.



5 × 5 × 5 × 5 = 100