

TARGET To know and use the vocabulary of prime numbers, prime factors and composite numbers.

Factors are numbers that divide exactly into another number.

A prime number is a number that is only divisible by itself and one.

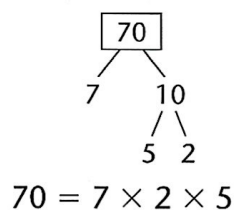
A composite number is a number which is not a prime number.

PRIME FACTORS

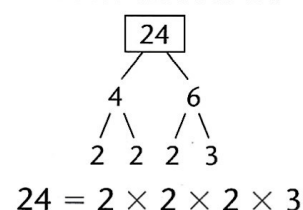
A factor which is also a prime number is a prime factor.

To find the prime factors of a number we can use a factor tree.

A factor tree for 70



A factor tree for 24



A

Find all the factors of:

- | | |
|------|-------|
| 1 8 | 5 25 |
| 2 10 | 6 24 |
| 3 12 | 7 18 |
| 4 21 | 8 28. |

Find all the prime numbers between:

- 9 10 and 20
- 10 20 and 30
- 11 30 and 40
- 12 40 and 50

Write down the next prime number after:

- | | |
|-------|--------|
| 13 54 | 17 49 |
| 14 68 | 18 85 |
| 15 80 | 19 91 |
| 16 62 | 20 74. |

Explain why these numbers are not prime numbers.

- | | |
|-------|-------|
| 21 21 | 23 49 |
| 22 38 | 24 33 |

B

Use a factor tree to find all the prime factors of:

- | | |
|------|--------|
| 1 32 | 5 48 |
| 2 49 | 6 42 |
| 3 80 | 7 75 |
| 4 66 | 8 100. |

Find a pair of prime numbers which give a total of:

- | | |
|-------|--------|
| 9 12 | 13 36 |
| 10 14 | 14 48 |
| 11 21 | 15 54 |
| 12 28 | 16 61. |

17 Find six pairs of prime numbers which give a total of 100.

Explain why these numbers are composite numbers.

- | | |
|--------|--------|
| 18 91 | 22 178 |
| 19 57 | 23 119 |
| 20 85 | 24 717 |
| 21 121 | 25 143 |

C

Use a factor tree to find all the prime factors of:

- | | |
|------|--------|
| 1 45 | 5 120 |
| 2 68 | 6 104 |
| 3 72 | 7 168 |
| 4 99 | 8 216. |

Break the second number down into prime factors to help work out:

- | | |
|-------------------|---------------------|
| 9 46×15 | 13 84×36 |
| 10 38×24 | 14 75×56 |
| 11 62×35 | 15 48×45 |
| 12 57×32 | 16 71×64 . |

Explain why these numbers are composite numbers.

- | | |
|---------|---------|
| 17 3447 | 21 221 |
| 18 203 | 22 209 |
| 19 253 | 23 1857 |
| 20 3201 | 24 323 |

25 Find all the prime numbers between 100 and 150.