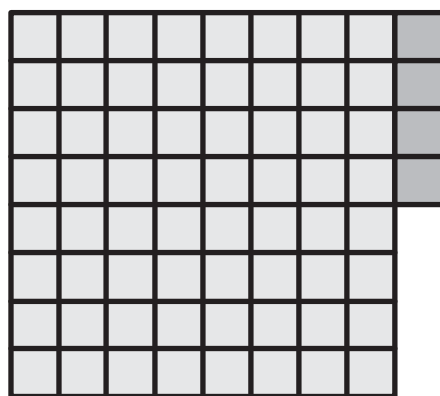




This brainteaser was supplied by the Mathematical Olympiads for Elementary and Middle Schools (www.moems.org).

When 68 is divided by a certain number,
the remainder is 4. Find the sum of
all possible divisors.





Solution: 120.

Any number that leaves a remainder of 4 when divided into 68 will have two characteristics:

- It will be a factor of $68 - 4 = 64$.
- It will be greater than 4. (It's impossible for any number to leave a remainder larger than itself.)

The factors of 64 greater than 4 are 8, 16, 32 and 64, which have a sum of $8 + 16 + 32 + 64 = 120$.