

13

$M = 2^7 \times 3^3 \times 5^2$

(a)

Write $14M$ as a product of its prime factors.
Give your answer in index form.

.....

[2]

(b)

R is an integer.

$\frac{M}{R}$ is a cube number.

Find the smallest possible value of R .

.....

[2]

14

Find the value of

(a)

$3^2 \div 3^{-2}$

.....

[2]

(b)

$16^{-\frac{3}{2}}$.

.....

[2]

7

(a)

The sum of all the prime numbers less than 10 is equal to 17.

Find the sum of all the prime numbers less than 16.

.....

[2]

(b)

x is an integer.

The sum of the prime numbers greater than 6 and less than x is equal to 18.

Find a possible value for x .

.....

[1]

$x =$

[1]

8

Find the highest common factor (HCF) of 36 and 54.

.....

[2]

10 (a) Write down **all** the factors of 18.

..... [2]

(b) Factorise.

$3y - xy + 15 - 5x$

..... [2]

(c) $3y - xy + 15 - 5x = 18$

where x and y are positive integers.

Using your answers to **part (a)** and **part (b)**, find one possible value of x and the corresponding value of y .

$x =$, $y =$ [2]

11 A warehouse has a floor area of 800 m^2 .
The plan of the warehouse is drawn to a scale of 1 : 50.

Calculate the floor area on the plan.
Give your answer in square centimetres.

③ cm^2 [3]