QNo:1

(a) Given that,

Sum of three consecutive
prime numbers = 97

To Find,

Find the numbers = ?

Solution,

Let the three consecutive prime
numbers are: $(x+2), (x+3), (x+5)$

According to the given statement,

$(x+2) + (x+3) + (x+5) = 97$

$x + 2 + x + 3 + x + 5 = 97$

$3x + 10 = 97$

$3x = 97 - 10$

$\dfrac{3x}{3} = \dfrac{87}{3}$

$x = 29$

Answer,

Three consecutive prime numbers are,

$x + 2 = 29 + 2 = \mathbf{31}$

$x + 3 = 29 + 3 = \mathbf{32}$ Even

$x + 5 = 29 + 5 = \mathbf{34}$ Even

(B) How is boy related to girl?

Given:

uncle $\to$ father $\to$ daughter $\to$ son

The boy is seconed cousin to the girl.

(C) Probability of getting of two number with even products:

No. of dice = 2

No. of sides per dice = 6

no. of even sides per dice = 3

$$= 3 \times 2$$

Probability of getting two numbers

with even products are $= 2^6$

$$= 64.$$

(D) The average number of visitors per day = ?

Given:

Average visitors on sunday = 510

Average visitors on other days = 240

To Find:

Average visitors per day in a month = ?

Solution:

Average visitors = $\dfrac{510 + 240}{30}$ = 25

per day

QNo:3

Given,

(A)

Work done by A = 15 days

Work done by B = 20 days

work done together = 4 days

To Find;

Fraction of work left = ?

Solution;

$$\frac{1}{x} = \frac{1}{A} + \frac{1}{B} = \frac{1}{15} + \frac{1}{20}$$

$$\frac{1}{x} = \frac{7}{60}$$

$$\frac{7x}{x} = \frac{60}{7}$$

$$x = 56.$$

work left = $\frac{1}{x} = \frac{56}{4} = 14$ days.

(D) Find the number:

(1) 2, 3, 6, 4, 5, 20, _____, 3, 18

The missing number is 6 because,

$2 \times 3 = 6 \implies 2, 3, 6$

$4 \times 5 = 20 \implies 2, 3, 6, 4, 5, 20$

$6 \times 3 = 18 \implies 2, 3, 6, 4 5, 20, 6, 3, 18.$

2. 1, 3, 9, 15, 25, ___, 49

1, 3, 9, 15, 25, 35, 49
3×3   5×5   7×7

3. 2, 7, 10, 22, 18, 37, 26, ___

2, 7, 10, 22, 18, 37, 26, 33
The pairing logic
(2,7), (10,22), (18,37), (26, 33)
6 gap   6 gap   6 gap   6 gap

4. 34, 7, 37, 14, 40, 28, 43, ___

Multiplication and subtraction logic
      -3   -3
34, 7, 37, 14, 40, 28, 43, 56
         ×2   ×2   ×2

5. 5, 7, 11, ___ 17, 19

5, 7, 11, 13, 17, 19
The logic of consecutive prime numbers.