

Correction

$$\begin{array}{r} \textcircled{1} \quad \begin{array}{r} \overline{20976} \mid 46 \\ 184 \\ \hline 257 \\ 230 \\ \hline 276 \\ 276 \\ \hline 0 \end{array} \end{array}$$

then 20976 divided by 46 is 456

$$\begin{array}{l} \textcircled{2} \quad x=3, \text{ the value of } x(x-1)(x-2)(x-3)(x-4) \text{ is} \\ 3(3-1)(3-2)(3-3)(3-4) \\ 3(2)(1)(0)(-1) \\ 0 \end{array}$$

the value is zero(0).

③. The prime numbers are 2, 3, 5, 7 hence 4

$$\text{Probability} = \frac{4}{6} = \frac{2}{3}$$

4.
$$\text{Average} = \frac{2 + x + 12}{3} = 8$$

$$2 + x + 12 = 8 \times 3$$

$$2 + x + 12 = 24$$

$$x + 14 = 24$$

$$x = 24 - 14$$

$$x = 10$$

⑤ If $x = 3$, $y = 2x \Rightarrow y = 2 \times 3 = 6$
and $z = 3y = 3 \cdot 2x = 3 \cdot 6 = 18$

the average of x, y and z is

$$\frac{x+y+z}{3} = \frac{3+6+18}{3} = \frac{3(1+2+6)}{3} = 9$$

$$\begin{aligned}\text{or. } \frac{x+y+z}{3} &= \frac{x+2x+3 \cdot x}{3} \\ &= \frac{x+2x+3(2x)}{3} \\ &= \frac{x+2x+6x}{3} \\ &= \frac{x(1+2+6)}{3} \\ &= \frac{3(1+2+6)}{3} = 9\end{aligned}$$

the average is 9

⑥ the product of two integers p and q is 75.

$$p \cdot q = 75$$

the sum of all the possible value of p is

$$\begin{array}{r|l} 75 & 5 \\ 15 & 5 \\ 3 & 3 \\ 1 & \end{array}$$

$$\begin{array}{r|l} 75 & 3 \\ 25 & 5 \\ 5 & 5 \\ 1 & \end{array}$$

the sum of all the possible value of p is $75 + 15 + 3 + 25 + 1$ which is 124

⑦ the slope

$$\frac{3}{4}y + 4 = 2(x - 1)$$

$$3y + 16 = 8(x - 1)$$

$$3y = 8(x - 1) - 16$$

$$y = \frac{8}{3}x - \frac{8 + 16}{3}$$

$$y = \frac{8}{3}x - \frac{(8 + 16)}{3}$$

$$y = \frac{8}{3}x - 8$$

the slope is $\frac{8}{3}$

$$\textcircled{8} \quad 6\left(\frac{n-9}{2}\right) - \left(\frac{n-9}{3}\right)6 = 1 \times 6$$

$$3(n-9) - 2(n-9) = 6$$

$$3n - 27 - 2n + 18 = 6$$

$$n - 9 = 6$$

$$n = 9 + 6 = 15$$

$$\textcircled{9} \quad p + s = 109$$

Since p, q, r, s is a list of consecutive integers in increasing order, then q is 1 more than p and r is 1 less than s

$$\therefore q + r = (p+1) + (s-1)$$

$$= p + s + 1 - 1$$

$$= 109$$

$$\therefore \underline{\underline{109}}$$

(10)

$$1+2+3+\dots+99+100=1050 \text{ then}$$

$$10+20+30+\dots+990+1000=? \text{ so } 50500.$$

this sum is equal to the first 5050 with
adding zero which is 50500

11) perimeter $P=48\text{cm}$ what is w

$$L=17\text{cm}$$

$$P=2(L+w) \Rightarrow 48=2(17+w) \Rightarrow 48-34=2w$$

$14 \cdot = 2w$, $\boxed{w=7}$ the width is 7
(12) the last digit of $N = 1 \times 3 \times 7 \times \dots \times 95 \times 97$
is because $\times 99$ is 9

(13) Jules and Remy are buying bananas.
let $x = \text{Jules's bananas}$ and
 $y = \text{Remy's bananas}$
All of them buy bananas.
i.e. $x + y = 12$
and Jules buy 4 more bananas than
Remy.
i.e. $x = y + 4$

$$\begin{aligned}\text{then } x + y &= 12 \\ y + 4 + y &= 12 \\ 2y &= 12 - 4 \\ y &= 8/2\end{aligned}$$

then Remy $y = 4$ bought 4 bananas
and Jules bought $4 + 4 = 8$ bananas
4

14) find the HCF of 80 and 82

$$\begin{array}{r|l} 2 & 80 \\ 2 & 40 \\ 2 & 20 \\ 2 & 10 \\ 5 & 5 \\ & 1 \end{array}$$

$$\begin{array}{r|l} 2 & 82 \\ 41 & 41 \\ & 1 \end{array}$$

$$80 = 2^4 \times 5 \quad \text{and} \quad 82 = 2 \times 41$$

the HCF of 80 and 82 is 2.

15) $a + b = 20$, the maximum possible value of $a \times b$ is 100.

$$\frac{a}{0} \times \frac{b}{20} = 0$$

$$1 \times 19 = 19$$

$$2 \times 18 = 36$$

$$3 \times 17 = 51$$

$$4 \times 16 = 64$$

$$5 \times 15 = 75$$

$$6 \times 14 = 84$$

$$7 \times 13 = 91$$

$$\frac{a}{8} \times \frac{b}{12} = 96$$

$$9 \times 11 = 99$$

$$10 \times 10 = 100$$

$$11 \times 9 = 99$$

$$12 \times 8 = 96$$

$$14 \times 6 = 84$$

$$15 \times 5 = 75$$

$$16 \times 4 = 64$$

$$\frac{a}{17} \times \frac{b}{3} = 51$$

$$18 \times 2 = 36$$

$$19 \times 1 = 19$$

$$20 \times 0 = 0$$

$$13 \times 7 = 91$$