1>

Ans:- $4\frac{1}{2} - 3\frac{1}{7} + 13\frac{2}{7} - 8\frac{1}{4} \Rightarrow (4 - 3 + 13 - 8) + \left(\frac{1}{2} - \frac{1}{4} + \frac{2}{7} - \frac{1}{4}\right)$

$= (17 - 11) + \left(\frac{14 - 4 + 8 - 7}{28}\right) = 6 + \frac{22 - 11}{28} = 6 + \frac{11}{28} = \boxed{6\frac{11}{28}} \rightarrow (c)$

2>

Ans:- $6666 + 5555 - 9999 - 1111 \Rightarrow \boxed{1111} \rightarrow (b)$

3>

Ans:- $12846 \times 593 + 12846 \times 407 \Rightarrow 12846(593 + 407) = 12846 \times 1000$

$= \boxed{12846000} \rightarrow (a)$

4> let, $946 = a$ and $157 = b$

Ans:- So, $\frac{(a+b)^2 + (a-b)^2}{a^2 + b^2} \Rightarrow \frac{2(a^2 + b^2)}{(a^2 + b^2)} = \boxed{2} \rightarrow (d)$

5>

Ans:- let, $569 = x$ and $163 = y$

So, $\frac{(x+y)^2 - (x-y)^2}{xy} = \frac{4 \cdot x \cdot y}{x \cdot y} \Rightarrow \boxed{4} \rightarrow (b)$

6> Let, $578 = a$ and $432 = b$

So, $\frac{a^3 + b^3}{a^2 - ab + b^2} \Rightarrow \frac{(a+b)(a^2 - ab + b^2)}{(a^2 - ab + b^2)} = (a + b) = 578 + 432 = \boxed{1010} \rightarrow (d)$

7>

Ans:- $65798 \times 125 \Rightarrow 65798 \times \frac{1000}{8} = \frac{65798000}{8} = \boxed{8224750} \rightarrow (b)$

8>

Ans:- $\frac{1}{9}\left[1395^2 - 1398 \times 1392\right]$

Result $\Rightarrow$ outer part $\times \left(\frac{\text{Diff of Last 2 two numbers}}{2}\right)^2$

$= \frac{1}{9} \times \left(\frac{1398 - 1392}{2}\right)^2 = \frac{1}{9} \times \left(\frac{6}{2}\right)^2 = \frac{1}{9} \times (3)^2 = \frac{1}{9} \times 9 = \boxed{1} \rightarrow (c)$

9>

Ans:- $7829 \times 999 \Rightarrow 7829 \times (1000 - 1)$

$= 7829000 - 7829$

$= \boxed{7821171} \rightarrow (c)$

10)

Ans:- $1+\frac{x}{24} = \sqrt{1+\frac{100}{576}} = \sqrt{\frac{676}{576}} = \frac{26}{24}$

So, $x = (26-24) = \boxed{2} \Rightarrow (a)$

11)

Ans:- 481K673

Sum of all digits $\Rightarrow 4+8+1+K+6+7+3 = 29+K$

So, $29+K = 36$ or, $K = 36-29 = \boxed{7} \rightarrow (d)$

12)

Ans:- 97215K6

$9+2+5+6 = 22$

$7+1+K = 8+K$

Hence, $22-(8+K) = 11$

or, $8+K = 22-11 = 11$

or, $K = 11-8 = \boxed{3} \rightarrow (a)$

13)

Ans:- Last 2 digit as a whole number must be divisible by 4.

So, required answer is $\Rightarrow \boxed{9135792} \rightarrow (d)$

14)

Ans:- Last 3 digit as a whole number must be divisible by 8.

So, required answer is $\Rightarrow \boxed{9187672} \rightarrow (a)$

15)

Ans:- When a number is divisible by 45, then the same number must be divisible by 5 as well as 9.

All the four numbers are divisible by 5.

But 202860 is only divisible by 9 as sum of its digits is $\Rightarrow 2+0+2+8+6+0 = 18$.

So, the required number is $\Rightarrow \boxed{202860} \rightarrow (c)$

16)

Ans:- $5+1+7+K+3+2+4 = 22+K$

So, $22+K = 24$ or, $K = 24-22 = \boxed{2} \Rightarrow (c)$

17)

Ans:- $3.46\overline{7} \Rightarrow 3\frac{467-46}{900} = \boxed{3\frac{421}{900}} \rightarrow (a)$

18) $\frac{3}{5}, \frac{4}{7}, \frac{8}{9}, \frac{9}{11}, \frac{13}{15}$

Ans:- $\frac{300}{5}, \frac{400}{7}, \frac{800}{9}, \frac{900}{11}, \frac{1300}{15}$

$= 60, 57, 88, 82, 86$

② ① ⑤ ③ ④

Hence, ascending order $\Rightarrow \boxed{\frac{4}{7} < \frac{3}{5} < \frac{9}{11} < \frac{13}{15} < \frac{8}{9}} \rightarrow (b)$

19)

Ans:- As the difference of numerator from denominator is same for all the given Fractions, so, we can take the magnitude of numerators (or denominators) to arrange the fractions in order.

Hence, descending order $\Rightarrow \boxed{\frac{550}{363} > \frac{267}{280} > \frac{123}{136} > \frac{5}{18} > \frac{1}{14}} \rightarrow (a)$

20)

Ans:- $\frac{0.125 - 0.027}{0.5 \times 0.5 + 0.15 + 0.09} \Rightarrow \frac{(0.5)^3 - (0.3)^3}{(0.5)^2 + 0.5 \times 0.3 + (0.3)^2}$

Let, $0.5 = x$ and $0.3 = y$, then

$\frac{(a)^3 - (b)^3}{(a)^2 + a.b + (b)^2} \Rightarrow \frac{(a-b)(a^2 + ab + b^2)}{(a^2 + ab + b^2)} = (a-b) = (0.5 - 0.3)$

$= \boxed{0.2} \rightarrow (d)$

21)

Ans:- $0.\overline{32} \Rightarrow 0.3232 - - -$

$0.\dot{3} \Rightarrow 0.3333 - - -$

$0.2 \Rightarrow 0.2222 - - -$

$0.8787 - - -$

Hence, required sum $\Rightarrow 0.8787 \cdots = \boxed{0.\overline{87}} \rightarrow (d)$

22)

Ans:- $(999 \times 6) + \left(\frac{1}{7} + \frac{2}{7} + \frac{3}{7} + \frac{4}{7} + \frac{5}{7} + \frac{6}{7}\right)$

$= 5994 + \frac{21}{7}$

$= 5994 + 3 = \boxed{5997} \rightarrow (c)$

23)

Ans:- $999\frac{995}{999} \times 9999 \Rightarrow \left(999 + \frac{999-4}{999}\right) \times 9999$

$= \left(1000 - \frac{4}{999}\right) \times 9999 = 9999000 - 4 = \boxed{9998996} \rightarrow (b)$

24)

Ans:- As the differences are same, then the least product value will be the greatest.

Hence, required answer is $\Rightarrow \boxed{(\sqrt{10} - \sqrt{4})} \rightarrow (c)$

25)

Ans:-

$\sqrt[12]{2} = 2^6 = 64$ (2)

$\sqrt[12]{5} = 5^3 = 125$ (4)

$\sqrt[12]{7} = 7^2 = 49$ (1)

$\sqrt[12]{3} = 3^4 = 81$ (3)

Hence, the required answer is $\Rightarrow \boxed{\sqrt[6]{7}} \rightarrow (c)$

26)

Ans:- $3^{40}, 7^{20}, 4^{35}, 5^{30}$

$= 3^{40}, 7^{20}, 2^{70}, 5^{80}$

$= 81^{10}, 49^{10}, 128^{10}, 125^{10}$

Hence, the greatest number is $\Rightarrow \boxed{4^{35}} \rightarrow (c)$