SIMPLIFICATION

सरलीकरण

PRACTICE SHEET

WITH SOLUTIONS

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Rankers Gurukul

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SIMPLIFICATION/सरलीकरण
(Practice Sheet With Solution)

1. What value should come in the place of question mark in the following equation?
निम्नलिखित समीकरण के प्रश्नवाचक चिह्न के स्थान पर कौन-सा मान आना चाहिए?
(0.006 ÷ 0.01) + (0.008 ÷ ?)–(0.003 ÷ 0.03) = 0.6

UPSI 1/12/2021 (Shift-01)

(a) 0.08 (b) 0.001
(c) 0.8 (d) 0.008

2. Find the value approximate to two decimals.
दो दशमलव तक अनुमानित मान ज्ञात कीजिए।
(44.6+346.33+3346.333+ 33346.3333) ÷ 50 = ?

UPSI 13/11/2021 (Shift-02)

(a) 742.67 (b) 740.67
(c) 743.67 (d) 741.67

3. What is the value of

$$\frac{\sqrt{7}+\sqrt{5}}{\sqrt{7}-\sqrt{5}} \times \frac{\sqrt{14}+\sqrt{10}}{\sqrt{14}-\sqrt{10}} + \frac{\sqrt{10}}{\sqrt{5}} ?$$

$$\frac{\sqrt{7}+\sqrt{5}}{\sqrt{7}-\sqrt{5}} \times \frac{\sqrt{14}+\sqrt{10}}{\sqrt{14}-\sqrt{10}} + \frac{\sqrt{10}}{\sqrt{5}}$$ का मान क्या है?

SSC CGL MAINS (08/08/2022)

(a) $\sqrt{2}+1$ (b) $2\sqrt{2}+2$
(c) $\sqrt{2}+2$ (d) $2\sqrt{2}+1$

4. What value should come in the place of question mark (?) in the following equation?
निम्नलिखित समीकरण में प्रश्न चिह्न (?) के स्थान पर क्या मान आना चाहिए?
(0.006 ÷ ?) + (0.004 ÷ 0.04) + (0.03 ÷ 0.3) = 0.3

UPSI 14/11/2021 (Shift-03)

(a) 0.006 (b) 0.6
(c) 0.001 (d) 0.06

5. If (48 ÷ 72 × 3) – [15 ÷ 8 × (40 – 32) – 10] + 2P = 6 ÷ 2, then find the value of P
यदि (48 ÷ 72 × 3) – [15 ÷ 8 × (40 – 32) – 10] + 2P = 6 ÷ 2, तो P का मान ज्ञात कीजिए

SSC CPO 03/10/2023 (Shift-3)

(a) 2 (b) 4
(c) 1 (d) 3

6. Simplify the following
निम्नलिखित को हल कीजिए।

$81^{\frac{3}{4}}$ + [(20 ÷ 5 of 3 × 6)+{(8 ÷ 24 of 3)× 4} – 10 ÷ 5] – $\left(\frac{1}{32}\right)^{\frac{-2}{5}}$

SSC CPO 09/11/2022 (Shift-01)

(a) $24\frac{1}{4}$ (b) $21\frac{1}{9}$
(c) $27\frac{4}{5}$ (d) $29\frac{4}{9}$

7. Solve the following equation.
निम्नलिखित समीकरण को हल कीजए।
$12^3 \times (16^2 - 14^2 - 40) \div 2 - 9^4 = ?$

SSC CPO 09/11/2022 (Shift-03)

(a) 17280 (b) 6561
(c) 10719 (d) 986

8. If 65% of 350 – ?% of 250 + 40% of 120 = 158, then find the value of ?
यदि 350 का 65% – 250 का ?% + 120 का 40% = 158 हो, तो ? का मान ज्ञात करें।

SSC CGL 19/07/2023 (Shift-03)

(a) 57 (b) 63
(c) 47 (d) 54

9. Simplify: [0.08 – {3.5 – 4.9 – (12.5 – 7.8 – 4.6)}]
[0.08 – {3.5 – 4.9 – (12.5 – 7.8 – 4.6)}] का मान ज्ञात कीजिए।

SSC CGL 20/07/2023 (Shift-04)

(a) 1.58
(b) 0.08
(c) 2.58
(d) 12.58

10 Find the value of $\frac{0.04}{0.05}$ of

$$\frac{\left(3\frac{1}{3}-2\frac{1}{2}\right)\div\frac{1}{2}\text{ of }1\frac{1}{4}}{\frac{1}{3}+\frac{1}{5}\text{ of }\frac{1}{9}}$$

$\frac{0.04}{0.05}$ of $\frac{\left(3\frac{1}{3}-2\frac{1}{2}\right)\div\frac{1}{2}\text{ of }1\frac{1}{4}}{\frac{1}{3}+\frac{1}{5}\text{ of }\frac{1}{9}}$ का मान ज्ञात कीजिए।

SSC CPO 03/10/2023 (Shift-01)

(a) 5 (b) 0.4
(c) 3 (d) 0.03

11. The square root of is:/का वर्गमूल है:

$\left(\frac{1}{4}\right)\times\left(\frac{1}{9}\right)\times\left(\frac{1}{25}\right)\times\left(\frac{1}{49}\right)\div\left(\frac{36}{121}\right)$

SSC CPO 04/10/2023 (Shift-01)

(a) $\frac{11}{12.60}$ (b) $\frac{1}{1260}$
(c) $\frac{11}{1260}$ (d) $\frac{1260}{11}$

12. The value of

$1\frac{2}{5}-\left[3\frac{3}{4}\div\left\{1\frac{1}{4}\div\frac{1}{2}\left(1\frac{1}{2}\times3\frac{1}{3}\div1\frac{1}{3}\right)\right\}\right]$

$1\frac{2}{5}-\left[3\frac{3}{4}\div\left\{1\frac{1}{4}\div\frac{1}{2}\left(1\frac{1}{2}\times3\frac{1}{3}\div1\frac{1}{3}\right)\right\}\right]$ का मान कितना होगा।

SSC CPO 04/10/2023 (Shift-01)

(a) 1 (b) 3
(c) 2 (d) 0

13. Simplify/सरल कीजिए।

$\left(2\frac{1}{2}\div1\frac{7}{8}\right)\div\left(9\frac{3}{8}\div11\frac{2}{3}\text{ of }\frac{1}{8}\right)$

SSC CHSL 09/08/2023 Shift-04

(a) $\frac{33}{135}$ (b) $\frac{11}{135}$
(c) $\frac{28}{135}$ (d) $\frac{57}{135}$

14. Simplify/सरल कीजिए।

$\frac{\left(4\frac{1}{3}+3\frac{1}{3}\times1\frac{4}{5}\div3\frac{3}{4}\times\left(1\frac{1}{2}+1\frac{1}{3}\right)\right)}{\left(\frac{2}{3}\div\frac{5}{6}\times\frac{2}{3}\right)}$

SSC CHSL, 10/08/2023 (Shift-2)

(a) $11\frac{3}{8}$ (b) $10\frac{3}{8}$
(c) $14\frac{3}{8}$ (d) $16\frac{5}{8}$

15. Simplify/सरल कीजिए।

$\frac{\sqrt[3]{-2744}\times\sqrt[3]{-216}}{\sqrt[3]{\frac{64}{729}}}$

SSC CPO 09/11/2022 (Shift-01)

(a) 164 (b) 512
(c) 189 (d) 156

16. Simplify/सरल कीजिए।

$456-\left(76+15^2\right)+\frac{3}{4}\text{ of }\frac{76}{18}\div\left(\frac{19}{72\times24}\right)$

SSC CPO 10/11/2022 (Shift-02)

(a) 443 (b) 256
(c) 356 (d) 401

17. Simplify/सरल कीजिए।

$456-\left(76+15^2\right)+\frac{3}{4}\text{ of }\frac{76}{18}\div\left(\frac{19}{72\times24}\right)$

SSC CPO 10/11/2022 (Shift-03)

(a) 17 (b) 21
(c) 19 (d) 12

18. Simplify/सरल कीजिए।

$\frac{\left[\frac{5}{8}-\left\{\frac{3}{8}-\left(\frac{5}{8}-\frac{3}{8}\right)\right\}\right]\text{ of }8.8-1.2}{4\frac{1}{6}\div2.5\times2\div\frac{1}{6}\text{ of }60+\left(\frac{3}{4}-\frac{3}{8}\right)}$

SSC CPO 11/11/2022 (Shift-01)

(a) $5\frac{22}{43}$ (b) $3\frac{23}{67}$
(c) $4\frac{44}{85}$ (d) $4\frac{4}{5}$

19. Find the value of/का मान ज्ञात करें।

$6\frac{8}{15}\div\frac{7}{9}\text{ of }\left(1\frac{1}{10}+5\frac{1}{5}\right)+\frac{2}{5}\div7\frac{1}{5}$

SSC CPO 11/11/2022 (Shift-02)

(a) $\frac{25}{16}$ (b) $\frac{5}{14}$
(c) $\frac{25}{18}$ (d) $\frac{5}{18}$

20. What is the positive value of the following expression?
निम्नलिखित व्यंजक का धनात्मक मान क्या होगा?

$\sqrt{36\div15\text{ of }2\text{ of }\left[\begin{array}{l}25\times4\div4\text{ of}\\\{29-(8-11)\div\}\\(9\times5\div5\text{ of }3)\end{array}\right]}$

SSC CPO 11/11/2022 (Shift-02)

(a) $1\frac{5}{6}$ (b) $1\frac{1}{5}$

(c) $2\frac{4}{5}$ (d) $2\frac{3}{5}$

21. Simplify/सरल कीजिए।

$$\left[25^2+8\div2^3-\left\{\begin{matrix}16+\left(28 \text{ of } 7\div2^2\right)\\-\left(18^2\div12^2 \text{ of } \frac{1}{8}\right)\end{matrix}\right\}\right]$$

SSC CPO 11/11/2022 (Shift-03)

(a) 626 (b) 529

(c) 721 (d) 579

22. Find the value of/का मान ज्ञात करें।

$$\frac{40-\frac{3}{4}\text{of }32}{37-\frac{3}{4}\text{of }(34-6)}$$

SSC CPO 23/11/2020 (Shift-1)

(a) 1 (b) 0

(c) $-\frac{1}{2}$ (d) $\frac{1}{2}$

23. Find the value of/का मान ज्ञात करें।

$$\left(5\frac{1}{4}\div\frac{3}{7}\text{of}\frac{1}{2}\right)\div\left(5\frac{1}{9}-7\frac{7}{8}\div9\frac{9}{20}\right)\times\frac{11}{21}-\left(5\div2\text{of}\frac{1}{2}\right)$$

SSC CPO 23/11/2020 (Shift-2)

(a) 0 (b) $\frac{35}{24}$

(c) –2 (d) $\frac{15}{28}$

24. Find the value of/का मान ज्ञात करें।

$$\left(5\div2\text{of}\frac{1}{2}\right)+\left(5\frac{1}{4}\div\frac{3}{7}\text{of}\frac{1}{2}\right)\div\left(5\frac{1}{9}-7\frac{7}{8}\div9\frac{9}{20}\right)\times\frac{11}{21}$$

SSC CPO 24/11/2020 (Shift-1)

(a) $\frac{35}{24}$ (b) $\frac{15}{28}$

(c) –2 (d) 8

25. Simplify the following expression.

निम्न व्यंजक का मान ज्ञात कीजिए।

$$\frac{\left(12+5-\frac{48}{16}+71\right)+\left(\frac{\frac{72}{36}+6\times7}{11}\right)\times[(51+4-13)+(13-12\times7)]}{232}$$

SSC CGL 19/07/2023 (Shift-02)

(a) $\frac{-31}{233}$ (b) $\frac{31}{233}$

(c) $\frac{41}{232}$ (d) $\frac{-31}{232}$

26. If $\sqrt{1+\frac{x}{529}}=\frac{24}{23}$, then the value of x is:

यदि $\sqrt{1+\frac{x}{529}}=\frac{24}{23}$ है, तो x का मान ज्ञात कीजिए।

SSC CPO 11/11/2022 (Shift-02)

(a) 15 (b) 27

(c) 47 (d) 30

27. Simplify the given expression.

$y + 2x - [(y - (y - x + y) - (x + y) + y] - 2y.$

दिए गए व्यंजक का मान ज्ञात कीजिए।

$y + 2x - [(y - (y - x + y) - (x + y) + y] - 2y.$

SSC CGL TIER I 17/07/2023 (Shift-01)

(a) – y (b) – 2x

(c) Y (d) 2x

28. What is the value of the given expression ?

$$\frac{4^{a+4}-5\times4^{a+2}}{15\times4^a-2^2\times4^a}$$

दिए गए व्यंजक का मान क्या है?

$$\frac{4^{a+4}-5\times4^{a+2}}{15\times4^a-2^2\times4^a}$$

SSC CGL (PRE) 24/07/2023 (Shift-1)

(a) 16 (b) 64

(c) 20 (d) 24

29. Arrangement of the fractions $\frac{4}{3},\frac{-2}{9},\frac{-7}{8},\frac{5}{12}$ in ascending order is

भिन्नों $\frac{4}{3},\frac{-2}{9},\frac{-7}{8},\frac{5}{12}$ को आरोही क्रम में व्यवस्थित करना है

(a) $-\frac{7}{8},-\frac{2}{9},\frac{5}{12},\frac{4}{3}$ (b) $-\frac{7}{8},-\frac{2}{9},\frac{4}{3},\frac{5}{12}$

(c) $-\frac{2}{9},-\frac{7}{8},\frac{5}{12},\frac{4}{3}$ (d) $-\frac{2}{9},-\frac{7}{8},\frac{4}{3},\frac{5}{12}$

30. Sum of thre fractions is $2\frac{11}{24}$. On dividing the largest fraction by the smallest fraction $\frac{7}{6}$ is obtained which is $\frac{1}{3}$ greater than the middle fraction. The smallest fraction is

तीन भिन्नों का योग $2\frac{11}{24}$ है। सबसे बड़ी भिन्न को सबसे छोटी भिन्न से विभाजित करने पर $\frac{7}{6}$ प्राप्त होता है जो कि मध्य भिन्न से $\frac{1}{3}$ अधिक है। सबसे छोटी भिन्न है।

(a) $\frac{5}{8}$ (b) $\frac{3}{4}$

(c) $\frac{5}{6}$ (d) $\frac{3}{7}$

31. Which of the largest of the following fraction?
निम्नलिखित में से कौन सा भिन्न सबसे बड़ा है?

(a) $\frac{8}{11}$ (b) $\frac{3}{5}$

(c) $\frac{11}{17}$ (d) $\frac{2}{3}$

32. Which of the following fractions does not lie between $\frac{5}{6}$ and $\frac{8}{15}$?

निम्नलिखित में से कौन सा भिन्न $\frac{5}{6}$ और $\frac{8}{15}$ के बीच नहीं है?

(a) $\frac{2}{3}$ (b) $\frac{3}{4}$

(c) $\frac{4}{5}$ (d) $\frac{6}{7}$

33. A fraction becomes $\frac{9}{11}$, if 2 is added to both the numerator and the denominator. If 3 is added to both the numerator and the denominator it becomes $\frac{5}{6}$. What is the fraction?

एक भिन्न $\frac{9}{11}$ हो जाती है, यदि उसके अंश और हर दोनों में 2 जोड़ दिया जाए। यदि अंश और हर दोनों में 3 जोड़ दिया जाए तो यह $\frac{5}{6}$ हो जाता है भिन्न क्या है?

(a) $\frac{7}{9}$ (b) $\frac{3}{7}$

(c) $\frac{5}{9}$ (d) $\frac{7}{10}$

34. A fraction having denominator 30 and lying between $\frac{5}{8}$ and $\frac{7}{11}$ is

एक भिन्न जिसका हर 30 है और जो $\frac{5}{8}$ और $\frac{7}{11}$ के बीच है

(a) $\frac{18}{30}$ (b) $\frac{19}{30}$

(c) $\frac{20}{30}$ (d) $\frac{21}{30}$

35. The greatest number among $0.7+\sqrt{0.16}$, $1.02-\frac{0.6}{24}$, 1.2×0.83 and $\sqrt{1.44}$

$0.7+\sqrt{0.16}$, $1.02-\frac{0.6}{24}$, 1.2×0.83 और $\sqrt{1.44}$ में से सबसे बड़ी संख्या

(a) $0.7+\sqrt{0.16}$ (b) $\sqrt{1.44}$

(c) 1.2×83 (d) $1.02+\frac{0.6}{24}$

36. The least number among $\frac{4}{9}, \sqrt{\frac{9}{49}}, 0.\overline{45}$ and $(0.8)^2$ is

$\frac{4}{9}, \sqrt{\frac{9}{49}}, 0.\overline{45}$ और $(0.8)^2$ में सबसे छोटी संख्या है

(a) $\frac{4}{9}$ (b) $\sqrt{\frac{9}{49}}$

(c) 0.45 (d) $(0.8)^2$s

37. Find the value of/का मान ज्ञात कीजिए।

$1\times2+2\times3+3\times4+4\times5+\ldots\ldots\ldots\ldots+10\times11$

(a) 4329 (b) 5826

(c) 4290 (d) 3815

38. If $5\sqrt{3}+\sqrt{75}=17.32$ then the value of $14\sqrt{3}+\sqrt{108}$ is:

यदि $5\sqrt{3}+\sqrt{75}=17.32$ है, तो $14\sqrt{3}+\sqrt{108}$ का मान ज्ञात करें।

SSC CGL 20/04/2022 (Shift-03)

(a) 32.46 (b) 35.64

(c) 34.64 (d) 33.86

39. Find the value of/का मान ज्ञात कीजिए।

$\frac{1}{2}+\frac{1}{6}+\frac{1}{12}+\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}$

(a) $\frac{7}{9}$ (b) $\frac{3}{4}$

(c) $\frac{6}{5}$ (d) $\frac{8}{9}$

40. Find the value of/का मान ज्ञात कीजिए।

$\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{72}+\frac{1}{90}$

(a) $\frac{1}{10}$ (b) $\frac{3}{5}$

(c) $\frac{3}{20}$ (d) $\frac{7}{20}$

41. Find the value of/का मान ज्ञात कीजिए।

$\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}+\frac{1}{132}$

(a) $\frac{1}{8}$ (b) $\frac{1}{7}$

(c) $\frac{1}{6}$ (d) $\frac{1}{10}$

42. Find the value of/का मान ज्ञात कीजिए।

$\frac{1}{15}+\frac{1}{35}+\frac{1}{63}+\frac{1}{99}+\frac{1}{143}$

(a) $\frac{5}{39}$ (b) $\frac{4}{39}$

(c) $\frac{2}{39}$ (d) $\frac{7}{39}$

43. The simplified value of/का सरलीकृत मान है।

$\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right).....\left(1-\frac{1}{99}\right)\left(1-\frac{1}{100}\right)$

(a) $\frac{2}{99}$ (b) $\frac{1}{25}$

(c) $\frac{1}{50}$ (d) $\frac{1}{100}$

44. The value of/का मान है

$\left(1+\frac{1}{2}\right)\left(1+\frac{1}{3}\right)\left(1+\frac{1}{4}\right).....\left(1+\frac{1}{120}\right)$

(a) 30 (b) 40.5

(c) 60.5 (d) 121

45. Simplify/सरल कीजिए।

$999\frac{1}{7}+999\frac{2}{7}+999\frac{3}{7}+999\frac{4}{7}+999\frac{5}{7}+999\frac{6}{7}$

(a) 5997 (b) 5979

(c) 5994 (d) 2997

46. $\left(999\frac{999}{1000}\times 7\right)$ is equal to/किसके बराबर है:

(a) $6993\frac{7}{1000}$ (b) $7000\frac{7}{1000}$

(c) $6633\frac{7}{1000}$ (d) $6999\frac{993}{1000}$

47. Find the value of/का मान ज्ञात कीजिए।

$999\frac{995}{999}\times 999$

(a) 990809 (b) 998996

(c) 999824 (d) 998999

48. $999\frac{998}{999}\times 999$ is equal to/किसके बराबर है।

(a) 998999 (b) 999899

(c) 989999 (d) 999989

49. Simplify/सरल कीजिए।

$$2+\cfrac{1}{2+\cfrac{1}{2+\cfrac{1}{2+\frac{1}{5}}}}$$

(a) $\frac{137}{85}$ (b) $\frac{157}{65}$

(c) $\frac{138}{72}$ (d) $\frac{183}{95}$

50. Simplify/सरल कीजिए।

$$2+\cfrac{1}{1+\cfrac{1}{3+\cfrac{1}{2+\frac{1}{5}}}}$$

(a) $\frac{136}{49}$ (b) $\frac{127}{36}$

(c) $\frac{153}{64}$ (d) $\frac{189}{81}$

51. Simplify/सरल कीजिए।

$$2+\frac{2}{5+\frac{3}{1+\frac{4}{5}}}$$

(a) $\frac{25}{11}$ (b) $\frac{141}{69}$

(c) $\frac{138}{60}$ (d) $\frac{125}{65}$

52. Simplify/सरल कीजिए।

$$3+\frac{9}{2+\frac{3}{1+\frac{7}{8}}}$$

(a) $\frac{297}{54}$ (b) $\frac{531}{65}$

(c) $\frac{413}{91}$ (d) $\frac{217}{98}$

53. On simplification, the expression

$$\frac{4\frac{1}{7}-2\frac{1}{7}}{3\frac{1}{2}+1\frac{1}{7}}+\frac{1}{2+\frac{1}{2+\frac{1}{5-\frac{1}{5}}}}$$ is equal to

सरलीकरण करने पर व्यंजक $\frac{4\frac{1}{7}-2\frac{1}{7}}{3\frac{1}{2}+1\frac{1}{7}}+\frac{1}{2+\frac{1}{2+\frac{1}{5-\frac{1}{5}}}}$ के बराबर है

(a) $\frac{28}{65}$ (b) $\frac{24}{53}$

(c) $\frac{56}{53}$ (d) $\frac{14}{65}$

54. The value of/का मान है।

$$1-\frac{a}{1-\frac{1}{1+\frac{a}{1-a}}}$$

(a) a (b) 1 – a

(c) 1 (d) 0

55. The value of/का मान है।

$$\sqrt{\frac{4\frac{1}{7}-2\frac{1}{4}}{3\frac{1}{2}+1\frac{1}{7}}+\frac{1}{2+\frac{1}{2+\frac{1}{5-\frac{1}{5}}}}}$$

(a) 1 (b) 4

(c) 3 (d) 2

56. If $A=\frac{5}{3+\frac{3}{1-\frac{2}{3}}}$ and $B=\frac{1}{3-\frac{1}{2-\frac{1}{\frac{5}{7}}}}$ then the value of A + B

यदि $A=\frac{5}{3+\frac{3}{1-\frac{2}{3}}}$ तथा $B=\frac{1}{3-\frac{1}{2-\frac{1}{\frac{5}{7}}}}$ तो A + B का मान क्या है?

(a) $\frac{7}{3}$ (b) $\frac{7}{6}$

(c) $\frac{13}{12}$ (d) $\frac{8}{5}$

57. If $A=1+\frac{1}{1+\frac{1}{1+\frac{1}{9}}}$ and $B=\frac{1}{3+\frac{2}{2+\frac{1}{2}}}$, then what is the value of 19 (A + B)?

यदि $A=1+\frac{1}{1+\frac{1}{1+\frac{1}{9}}}$ तथा $B=\frac{1}{3+\frac{2}{2+\frac{1}{2}}}$ तो 19 (A + B) का मान क्या है?

(a) 34 (b) 200

(c) 30 (d) 25

58. If $A=\frac{1}{3+\frac{1}{1+\frac{1}{2+\frac{1}{4}}}}$ then what will be the value of 24A?

यदि $A=\frac{1}{3+\frac{1}{1+\frac{1}{2+\frac{1}{4}}}}$ तो 24A का मान क्या है?

(a) $\frac{13}{4}$

(b) $\frac{13}{40}$

(c) $\frac{13}{12}$

(d) $\frac{13}{2}$

59. What is the value of /मान क्या है?

$$\frac{1}{5-\frac{1}{3-\frac{1}{5-\frac{1}{4}}}}\ ?$$

(a) $\frac{45}{291}$ (b) $\frac{53}{246}$

(c) $\frac{48}{297}$ (d) $\frac{96}{281}$

60. The value of/का मान है।

$$\frac{(157\times157)+(157\times133)+(133\times133)}{(157\times157\times157)-(133\times133\times133)}$$

SSC CPO 04/10/2023 (Shift-02)

(a) 24 (b) $\frac{1}{290}$

(c) 290 (d) $\frac{1}{24}$

61. Simplify the given expression.
दिए गए व्यंजक को सरल कीजिए।

$$\frac{0.09\times0.09+0.04\times0.04+0.16\times0.16+2\times0.09\times0.04+2\times0.04\times0.16+2\times0.09\times0.16}{0.3\times0.3+0.2\times0.2+0.4\times0.4}$$

SSC CHSL 02/08/2023 Shift-04

(a) 0.38 (b) 0.24

(c) 0.32 (d) 0.29

62. Simplify the given expression $\frac{4913+343}{289+49-119}$.

$\frac{4913+343}{289+49-119}$ दिए गए व्यंजक को सरल कीजिए।

SSC CHSL 03/08/2023 (Shift-02)

(a) 24 (b) 26

(c) 22 (d) 20

63. Simplify/सरल करें:

$$\frac{(3.321)^3+(2.681)^3+(1.245)^3-3\times3.321\times2.681\times1.245}{(3.321)^2+(2.681)^2+(1.245)^2-(3.321\times2.681)-(2.681\times1.245)-(1.245\times3.321)}$$

SSC CHSL 04/08/2023 Shift-01

(a) 6.125 (b) 8.645

(c) 7.247 (d) 10.245

64. Simplify the given expression.
दिए गए व्यंजक को सरल कीजिए।

$$\frac{(80\times80\times80)+(70\times70\times70)+(50\times50\times50)-840000}{6400+4900+2500-5600-3500-4000}$$

SSC CHSL 10/08/2023 (Shift-01)

(a) 100 (b) 200

(c) 400 (d) 300

65. Simplify the given expression.
दिए गए व्यंजक को सरल कीजिए।

$$\frac{(4.2)^3-0.008}{(4.2)^2+0.84+0.04}$$

SSC CHSL, 14/08/2023 (Shift-2)

(a) 4 (b) –2

(c) 2 (d) –4

66. Simplify the expression:
निम्नलिखित व्यंजक को सरल कीजिए।

$$\frac{143\times143+143\times139+139\times139}{143\times143\times143-139\times139\times139}$$

SSC CHSL 17/08/2023 (Shift-3)

(a) $\frac{1}{2}$ (b) 282

(c) $\frac{1}{4}$ (d) 4

67. The value of/का मान ज्ञात करें।

$$\frac{6.35\times6.35\times6.35+3.65\times3.65\times3.65}{6.35\times6.35+3.65\times3.65-6.35\times3.65}$$

SSC CPO 23/11/2020 (Shift-1)

(a) 0.01 (b) 10

(c) 1 (d) 0.1

68. Simplify the given expression.

$$\frac{a^2-b^2-2bc-c^2}{a^2+b^2+2ab-c^2}$$

निम्नलिखित व्यंजक का मान क्या है?

$$\frac{a^2-b^2-2bc-c^2}{a^2+b^2+2ab-c^2}$$

SSC CPO 03/10/2023 (Shift-02)

(a) $\frac{a-b+c}{a+b+c}$

(b) $\frac{a+b+c}{a-b-c}$

(c) $\frac{a+b-c}{a-b-c}$

(d) $\frac{a-b-c}{a+b-c}$

69. Simplify the following expression. $(3x + 5)^2 + (3x - 5)^2$

निम्नलिखित व्यंजक का सरलीकरण करें।

$(3x + 5)^2 + (3x - 5)^2$

SSC CGL 17/07/2023 (Shift-01)

(a) $500x$ (b) $450x$

(c) $9x^2 + 50$ (d) $2(9x^2 + 25)$

70. Simplify $\frac{256x^4 - 16y^4}{(80x^2 - 20y^2)(16x^2 + 4y^2)}$.

$\frac{256x^4 - 16y^4}{(80x^2 - 20y^2)(16x^2 + 4y^2)}$ को सरलीकृत कीजिए।

SSC CGL (PRE) 25/07/2023 (Shift-2)

(a) 5 (b) $\frac{1}{20}$

(c) $\frac{1}{5}$ (d) $\frac{2}{5}$

71. Simplify the expression $\frac{s^2 + t^2 + 2st - u^2}{s^2 - t^2 - 2tu - u^2}$, provided $(s + t + u) \neq 0$.

व्यंजक $\frac{s^2 + t^2 + 2st - u^2}{s^2 - t^2 - 2tu - u^2}$, का मान कीजिए, यदि $(s + t + u) \neq 0$. दिया गया हो।

SSC CGL PRE 25/07/2023 (Shift-4)

(a) $\frac{s+t-u}{s-t-u}$ (b) $\frac{s+t+u}{s-t+u}$

(c) $\frac{s-t-u}{s+t-u}$ (d) $\frac{s-t+u}{s+t+u}$

72. Simplify

$\frac{1}{2+2p} + \frac{1}{2+2q} + \frac{1}{2+2r}$, when $p = \frac{x}{y+z}$, $q = \frac{y}{z+x}$ and $r = \frac{z}{x+y}$

यदि $p = \frac{x}{y+z}$ है, और $q = \frac{y}{z+x}$ और $r = \frac{z}{x+y}$ है तो $\frac{1}{2+2p} + \frac{1}{2+2q} + \frac{1}{2+2r}$ को सरलीकृत कीजिए।

(a) 1 (b) $x + y + c$

(c) 2 (d) $\frac{1}{2}$

73. Simplify the expression $\frac{\sqrt{x}-\sqrt{y}}{\sqrt{x}+\sqrt{y}}$, where $x = 2$ and $y = 3$.

यदि $x = 2$ और $y = 3$ है, तो $\frac{\sqrt{x}-\sqrt{y}}{\sqrt{x}+\sqrt{y}}$ व्यंजक को हल कीजिए।

SSC CGL PRE 25/07/2023 (Shift-4)

(a) $2\sqrt{6} - 6$ (b) $\sqrt{6} - 5$

(c) $5 - 2\sqrt{6}$ (d) $2\sqrt{6} - 5$

74 The value of 1801×1801 is:

1801×1801 का मान ..... है।

SSC CPO 09/11/2022 (Shift-02)

(a) 3423601 (b) 3243601

(c) 2343601 (d) 3243106

75. Convert $0.1\overline{8}$ into vulgar fraction

$0.1\overline{8}$ को अशिष्ट भिन्न में परिवर्तित करें

(a) $\frac{17}{90}$ (b) $\frac{18}{99}$

(c) $\frac{20}{99}$ (d) $\frac{16}{90}$

76. Convert $0.4\overline{3213}$ into vulgar fraction

$0.4\overline{3213}$ को अशिष्ट भिन्न में परिवर्तित करें

(a) $\frac{4316}{9999}$ (b) $\frac{4317}{9990}$

(c) $\frac{3217}{9990}$ (d) $\frac{2553}{9999}$

77. The difference of $5.\overline{76}$ and $2.\overline{3}$ is

$5.\overline{76}$ और $2.\overline{3}$ के बीच अंतर है।

(a) $2.\overline{54}$ (b) $3.\overline{73}$

(c) $3.\overline{46}$ (d) $3.\overline{43}$

78. $0.\overline{142857} \div 0.\overline{285714}$ is equal to/के बराबर है।

(a) 10 (b) 2

(c) $\frac{1}{2}$ (d) $\frac{1}{3}$

79. $(0.\overline{11} + 0.\overline{22}) \times 3$ is equal to/के बराबर है।

(a) 3 (b) $1.\overline{9}$

(c) 1 (d) $0.\overline{3}$

80. The vulgar fraction of $0.\overline{39}$ is:

$0.\overline{39}$ की अशिष्ट भिन्न है।

(a) $\frac{15}{33}$ (b) $\frac{11}{39}$

(c) $\frac{17}{39}$ (d) $\frac{13}{33}$

81. The vulgar fraction of $2.3\overline{49}$

$2.3\overline{49}$ की अशिष्ट भिन्न है।

(a) $\frac{2326}{999}$ (b) $\frac{2326}{990}$

(c) $\frac{2347}{999}$ (d) $\frac{2347}{990}$

82. What value should come in the place of question mark (?) in the following question?

निम्नलिखित प्रश्न में प्रश्न चिह्न (?) के स्थान पर कौन - सा मान आना चाहिए?

$0.5\overline{37} - 0.3\overline{35} + 0.2\overline{34} = ?$

UPSI 14/11/2021 (Shift-02)

(a) $\frac{422}{990}$ (b) $\frac{412}{990}$

(c) $\frac{442}{990}$ (d) $\frac{432}{990}$

83. Natu and Buchku each have certain number of orange. Natu says to Buchku. "If you give me 10 of your oranges. I will have twice the number of oranges left with you" Buchku replies, "If you give me 10 of your oranges. I will have the same number of oranges as left with you". What is the number of oranges with Natu and Buchku, respectively?

नाटू और बुचकू प्रत्येक के पास निश्चित संख्या में संतरे हैं। नाटू, बुचकू से कहता है. यदि आप मुझे अपने 10 संतरे दे दें तो मेरे पास आपके पास बचे हुए संतरों से दोगुने संतरें होंगे बुचकू उत्तर देता है, यदि आप मुझे अपने 10 संतरे दे देंगे तो मेरे पास आपके पास बचे हुए संतरों के समान संख्या होगी। नाटू और बुचकू के पास क्रमशः संतरों की संख्या कितनी है?

(a) 50, 20 (b) 70, 50

(c) 20, 50 (d) 50, 70

84. In an exam the sum of the scores of A and B is 120, that of B and C is 130 and that of C and A is 140. Then the score of C is:

एक परीक्षा में A और B के अंकों का योग 120 है, B और C के अंकों का योग 130 है और C और A के अंकों का योग 140 है। तो C का अंक है:

(a) 65 (b) 75

(c) 70 (d) 60

85. A number is doubled and 9 is added. If the resultant is trebled, it becomes 75. What is that number?

एक संख्या को दोगुना किया जाता है और 9 जोड़ा जाता है। यदि परिणाम को तिगुना कर दिया जाए, तो यह 75 हो जाता है। वह संख्या क्या है?

(a) 6 (b) 35

(c) 8 (d) None of these

86. The sum of two number is 8 and their product is 15. the sum of their reciprocals

दो संख्याओं का योग 8 है और उनका गुणनफल 15 है। उनके व्युत्क्रमों का योग

(a) $\frac{8}{15}$ (b) $\frac{15}{8}$

(c) 23 (d) $\frac{15}{8}$

87. A and B have together three times what B and C have, while A, B, C together have thirty rupees more than that of A. If B has 5 times that of C, then A has

A और B के पास कुल मिलाकर B और C से तीन गुना अधिक है, जबकि A, B, C के पास कुल मिलाकर A से तीस रुपये अधिक हैं। यदि B के पास C से 5 गुना अधिक है, तो A के पास हैं।

(a) Rs 60 (b) Rs 65

(c) Rs 75 (d) Rs 45

88. 252 m of pant cloth and 141 m of shirt cloth are available in a cloth store. To stitch one pant and one shirt, $2\frac{1}{2}$ m and $1\frac{3}{4}$ m of cloth are needed respectively. Then the approximate number of pants and shirts that can be made out of it are

एक कपड़े की दुकान में 252 मीटर पैंट का कपड़ा और 141 मीटर शर्ट का कपड़ा उपलब्ध है। एक पैंट और एक शर्ट सिलने के लिए क्रमशः $2\frac{1}{2}$ मीटर और $1\frac{3}{4}$ मीटर कपड़ें की आवश्यकता होती है। फिर इससे बनाई जा सकने वाली पैंट और शर्ट की अनुमानित संख्या है

(a) (80, 100) (b) (100, 80)

(c) (10, 90) (d) (90, 80)

89. There are 50 boxes and 50 persons. Person 1 keeps 1 marble in every box. Person 2 keeps 2 murpbles in every 2nd box person 3 keeps 3 marbles in every third box. This process goes on till person 50 keeps 50 marbles in the 50th box. Find the total number of marbles kept in the 50th box.

वहाँ 50 बक्से और 50 व्यक्ति हैं। व्यक्ति 1 प्रत्येक डिब्बे में 1 मार्बल रखता है। व्यक्ति 2 प्रत्येक दूसरे बॉक्स में 2 मार्बल्स रखता है, व्यक्ति 3 प्रत्येक तीसरे बॉक्स में 3 मार्बल्स रखता है। यह प्रक्रिया तब तक चलती रहती है जब तक कि 50 व्यक्ति 50वें डिब्बे में 50 मार्बल न रख ले। 50वें डिब्बे में रखे गए कंचों की कुल संख्या ज्ञात कीजिए।

(a) 43 (b) 78

(c) 6 (d) 93

90. The sum of a two digit number and the number obtained by reversing its digits is a square number. How many such numbers are there?

दो अंकों की संख्या और उसके अंकों को उलटने पर प्राप्त संख्या का योग एक वर्ग संख्या होती है। ऐसी कितनी संख्याएँ हैं?

(a) 5 (b) 6

(c) 7 (d) 8

Answer Key

1.(a)	**2.**(d)	**3.**(a)	**4.**(d)	**5.**(d)	**6.**(d)	**7.**(c)	**8.**(c)	**9.**(a)	**10.**(c)
11.(c)	**12.**(a)	**13.**(c)	**14.**(d)	**15.**(c)	**16.**(a)	**17.**(c)	**18.**(c)	**19.**(c)	**20.**(b)
21.(d)	**22.**(a)	**23.**(c)	**24.**(d)	**25.**(d)	**26.**(c)	**27.**(d)	**28.**(a)	**29.**(a)	**30.**(b)
31.(b)	**32.**(d)	**33.**(a)	**34.**(b)	**35.**(b)	**36.**(b)	**37.**(c)	**38.**(c)	**39.**(d)	**40.**(c)
41.(c)	**42.**(a)	**43.**(c)	**44.**(c)	**45.**(a)	**46.**(d)	**47.**(b)	**48.**(a)	**49.**(b)	**50.**(a)
51.(c)	**52.**(a)	**53.**(c)	**54.**(d)	**55.**(a)	**56.**(b)	**57.**(a)	**58.**(d)	**59.**(b)	**60.**(d)
61.(d)	**62.**(a)	**63.**(c)	**64.**(b)	**65.**(a)	**66.**(c)	**67.**(d)	**68.**(d)	**69.**(d)	**70.**(c)
71.(a)	**72.**(a)	**73.**(d)	**74.**(b)	**75.**(a)	**76.**(b)	**77.**(d)	**78.**(c)	**79.**(c)	**80.**(d)
81.(b)	**82.**(d)	**83.**(b)	**84.**(b)	**85.**(c)	**86.**(a)	**87.**(b)	**88.**(b)	**89.**(d)	**90.**(d)

SOLUTIONS

1. (a)

$\frac{0.006}{0.01}+\frac{0.008}{x}-\frac{0.003}{0.03}=0.6$

$0.6+\frac{0.008}{x}-0.1=0.6$

$\frac{0.008}{0.1}=x$

$x=0.08$

2. (d)

Given that,

(44.6+346.33+3346.333+ 33346.3333) ÷ 50

$=\frac{37083.55963}{50}=741.67$

3. (a)

$\frac{\sqrt{7}+\sqrt{5}}{\sqrt{7}-\sqrt{5}}\times\frac{\sqrt{14}+\sqrt{10}}{\sqrt{14}-\sqrt{10}}+\frac{\sqrt{10}}{\sqrt{5}}$

$\frac{7+5+2\sqrt{35}}{2}\times\frac{14+10-2\sqrt{140}}{4}$

$=+\frac{\sqrt{10}}{\sqrt{5}}$

$=\left(\left(6+\sqrt{35}\right)\times 6-\frac{\sqrt{140}}{2}\right)+\sqrt{2}$

$=\left(6+\sqrt{35}\right)\times\left(6-\sqrt{35}\right)+\sqrt{2}$

$=(36-35)+\sqrt{2}=\sqrt{2}+1$

4. (d)

$4\times 8+3=50-30\div 2$

$32+3=50-15$

$35=35$ [satisfied]

$(0.03\div 0.3)=0.3$

$(0.006\div x)+0.1+0.1=0.3$

$(0.006\div x)=0.1$

$x=0.06$

5. (d)

$(48\div 72\times 3)-[15\div 8\times(40-32)-10]+2P=6\div 2$

$\Rightarrow\left(\frac{2}{3}\times 3\right)-\left[\frac{15}{8}\times 8-10\right]+2P=3$

$\Rightarrow 2-5+2P=3$

$\Rightarrow 2P=6$

$\Rightarrow P=3$

6. (d)

Using the simplification rule BODMAS

$=81^{\frac{3}{4}}+\begin{bmatrix}(20\div 5\text{ of }3\times 6)+\\ \{(8\div 24\text{ of }3)\times 4\}\\ -10\div 5\end{bmatrix}-\left(\frac{1}{32}\right)^{\frac{-2}{5}}$

$=(3)^{4\times\frac{3}{4}}+\begin{bmatrix}(20\div 15\times 6)+\\ \{(8\div 72)\times 4\}-10\div 5\end{bmatrix}-\left(\frac{1}{2}\right)^{5\times\frac{-2}{5}}$

$=(3)^3+\left[\left(\frac{20}{15}\times 6\right)+\left\{\left(\frac{8}{72}\right)\times 4\right\}-2\right]-4$

$=27+\left[8+\frac{4}{9}-2\right]-4$

$=27+8-2-4+\frac{4}{9}=29\frac{4}{9}$

7. (c)

Solve using the simplification rule BODMAS

$12^3\times(16^2-14^2-40)\div 2-9^4$

$=1728\times(256-196-40)\div 2-6561$

$=1728\times 20\div 2-6561$

$=17280-6561$

$=10719$

8. (c)

65% of 350 – ?% of 250 + 40% of 120 = 158

227.5 + 48 – 158 = ? % of 250

117.5 = ? % of 250

$?\%=\frac{117.5}{250}$

$?=\frac{117.5\times 100}{250}=47$

9. (a)

[(0.08 – {3.5 – 4.9 – (12.5 – 7.8 – 4.6)}]

$=\left[\frac{8}{100}-\{-1.4-(12.5-12.4)\}\right]$

$=\left[\frac{8}{100}-\{-1.4-0.1\}\right]$

$=\left[\frac{8}{100}-\{-1.5\}\right]$

$=\left[\frac{8}{100}+1.5\right]=[0.08+1.5]=1.58$

10. (c)

$$\frac{0.04}{0.05} \text{ of } \frac{\left(3\frac{1}{3}-2\frac{1}{2}\right)\div\frac{1}{2}\text{of}\,1\frac{1}{4}}{\frac{1}{3}+\frac{1}{5}\text{of}\,\frac{1}{9}}$$

$$=\frac{4}{5}\text{ of }\frac{\left(\frac{10}{3}-\frac{5}{2}\right)\div\frac{1}{2}\text{of}\,\frac{5}{4}}{\frac{1}{3}+\frac{1}{45}}$$

$$=\frac{4}{5}\text{ of }\frac{\frac{5}{6}\div\frac{5}{8}}{\frac{16}{45}}=\frac{4}{5}\text{ of }\frac{4}{3}\times\frac{45}{16}$$

$$=\frac{4}{5}\text{ of }\frac{15}{4}=3$$

11. (c)

$$\sqrt{\frac{1}{4}\times\frac{1}{9}\times\frac{1}{25}\times\frac{1}{49}\div\frac{36}{121}}$$

$$=\frac{1}{2}\times\frac{1}{3}\times\frac{1}{5}\times\frac{1}{7}\times\frac{11}{6}$$

$$=\frac{11}{1260}$$

12. (a)

$$1\frac{2}{5}-\left[3\frac{3}{4}\div\left\{1\frac{1}{4}\div\frac{1}{2}\left(1\frac{1}{2}\times3\frac{1}{3}\div1\frac{1}{3}\right)\right\}\right]$$

$$=\frac{7}{5}-\left[\frac{15}{4}\div\left\{\frac{5}{4}\div\frac{1}{2}\left(\frac{3}{2}\times\frac{10}{3}\div\frac{4}{3}\right)\right\}\right]$$

$$=\frac{7}{5}-\left[\frac{15}{4}\div\left\{\frac{5}{4}\div\frac{1}{2}\left(\frac{3}{2}\times\frac{10}{3}\times\frac{3}{4}\right)\right\}\right]$$

$$=\frac{7}{5}-\left[\frac{15}{4}\div\left\{\frac{5}{4}\div\frac{1}{2}\times\frac{15}{4}\right\}\right]$$

$$=\frac{7}{5}-\left[\frac{15}{4}\div\left\{\frac{5}{2}\times\frac{15}{4}\right\}\right]$$

$$=\frac{7}{5}-\left[\frac{15}{4}\div\frac{75}{8}\right]$$

$$=\frac{7}{5}-\frac{2}{5}=\frac{5}{5}=1$$

13. (c) $\left(2\frac{1}{2}\div1\frac{7}{8}\right)\div\left(9\frac{3}{8}\div11\frac{2}{3}\text{of}\,\frac{1}{8}\right)=?$

$$\Rightarrow\left(\frac{5}{2}\times\frac{8}{15}\right)\div\left(\frac{75}{8}\div\frac{35}{3}\text{of}\,\frac{1}{8}\right)$$

$$\Rightarrow\left(\frac{4}{3}\right)\div\left(\frac{75}{8}\div\frac{35}{24}\right)$$

$$\Rightarrow\frac{4}{3}\div\left(\frac{75}{8}\times\frac{24}{35}\right)$$

$$\Rightarrow\frac{4}{3}\div\frac{45}{7}$$

$$\Rightarrow\frac{4}{3}\times\frac{7}{45}=\frac{28}{135}$$

14. (d)

$$\frac{4\frac{1}{3}+3\frac{1}{3}\times1\frac{4}{5}\div3\frac{3}{4}\times\left(1\frac{1}{2}+1\frac{1}{3}\right)}{\left(\frac{2}{3}\div\frac{5}{6}\times\frac{2}{3}\right)}$$

$$\Rightarrow\frac{\frac{13}{3}+\frac{10}{3}\times\frac{9}{5}\div\frac{15}{4}\times\left(\frac{3}{2}+\frac{4}{3}\right)}{\left(\frac{2}{3}\times\frac{6}{5}\times\frac{2}{3}\right)}$$

$$\Rightarrow\frac{\frac{13}{3}+\frac{10}{3}\times\frac{9}{5}\times\frac{4}{15}\times\left(\frac{17}{6}\right)}{\left(\frac{8}{15}\right)}$$

$$\Rightarrow\frac{\frac{13}{3}+\frac{68}{15}}{\frac{8}{15}}=\frac{133}{15}\times\frac{15}{8}=\frac{133}{8}=16\frac{5}{8}$$

15. (c)

Given,

$$=\frac{\sqrt[3]{-2744}\times\sqrt[3]{-216}}{\sqrt[3]{\frac{64}{729}}}$$

$$=\frac{\sqrt[3]{-14\times-14\times-14}\times\sqrt[3]{-6\times-6\times-6}}{\sqrt[3]{\frac{4\times4\times4}{9\times9\times9}}}$$

$$=\frac{-14\times-6}{\frac{4}{9}}$$

$$=\frac{-14\times-6\times9}{4}$$

$$=189$$

16. (a)

$$456-\left(76+15^2\right)+\frac{3}{4}\text{of}\,\frac{76}{18}\div\left(\frac{19}{72\times24}\right)$$

$$=456-(76+225)+\frac{19}{6}\div\left(\frac{19}{72\times24}\right)$$

$= 456 - 301 + \frac{19}{6} \times \left(\frac{72 \times 24}{19}\right)$

$= 456 - 301 + 288$

$= 744 - 301 = 443$

17. (c)

$\{1 + 7 + (16 \div 8 \div 2)\} + \left\{(6 \times 2^2 + 6) \times \frac{2}{\sqrt{36}}\right\}$

$= \{8 + 1\} + \left\{(6 \times 4 + 6) \times \frac{2}{6}\right\}$

$= 9 + \left\{30 \times \frac{2}{6}\right\}$

$= 9 + 10 = 19$

18. (c)

$$\frac{\left[\frac{5}{8} - \left\{\frac{3}{8} - \left(\frac{5}{8} - \frac{3}{8}\right)\right\}\right] \text{of} 8.8 - 1.2}{4\frac{1}{6} \div 2.5 \times 2 \div \frac{1}{6} \text{of} 60 + \left(\frac{3}{4} - \frac{3}{8}\right)}$$

$$= \frac{\left[\frac{5}{8} - \left\{\frac{3}{8} - \frac{2}{8}\right\}\right] \text{of } 8.8 - 1.2}{\frac{25}{6} \div 2.5 \times 2 \div 10 + \left(\frac{6-3}{8}\right)}$$

$$= \frac{\left[\frac{5}{8} - \frac{1}{8}\right] \text{of } 8.8 - 1.2}{\frac{25}{6} \times \frac{10}{25} \times 2 \times \frac{1}{10} + \left(\frac{3}{8}\right)}$$

$$= \frac{\frac{1}{2} \text{ of } 8.8 - 1.2}{\frac{1}{3} + \left(\frac{3}{8}\right)} = \frac{4.4 - 1.2}{\frac{1}{3} + \left(\frac{3}{8}\right)}$$

$$= \frac{4.4 - 1.2}{\frac{8+9}{24}} = \frac{3.2 \times 24}{17} = 4\frac{44}{85}$$

19. (c)

$6\frac{8}{15} \div \frac{7}{9} \text{ of } \left(1\frac{1}{10} + 5\frac{1}{5}\right) + \frac{2}{5} \div 7\frac{1}{5}$

$= 6\frac{8}{15} \div \frac{7}{9} \text{ of } \left(1\frac{1}{10} + 5\frac{1}{5}\right) + \frac{2}{5} \div 7\frac{1}{5}$

$= \frac{98}{15} \div \frac{7}{9} \text{ of } \left(\frac{11+52}{10}\right) + \frac{2}{5} \div \frac{36}{5}$

$= \frac{98}{15} \div \frac{7}{9} \text{ of } \frac{63}{10} + \frac{2}{5} \div \frac{36}{5}$

$= \frac{98}{15} \div \frac{49}{10} + \frac{2}{5} \div \frac{36}{5}$

$= \frac{98}{15} \times \frac{10}{49} + \frac{2}{5} \times \frac{5}{36}$

$= \frac{4}{3} + \frac{1}{18} = \frac{24+1}{18} = \frac{25}{18}$

20. (b)

$$\sqrt{36 \div 15 \text{ of } 2 \text{ of } \left[\begin{matrix} 25 \times 4 \div 4 \text{ of} \\ \{29 - (8 - 11) \\ \div (9 \times 5 \div 5 \text{ of } 3)\} \end{matrix}\right]}$$

$$= \sqrt{36 \div 15 \text{ of } 2 \text{ of } \left[\begin{matrix} 25 \times 4 \div 4 \text{ of} \\ \{29 + 3 \div \\ (45 \div 15)\} \end{matrix}\right]}$$

$$= \sqrt{36 \div 15 \text{ of } 2 \text{ of } \left[\begin{matrix} 100 \div 4 \text{ of} \\ \{29 + 3 \div 3\} \end{matrix}\right]}$$

$$= \sqrt{36 \div 15 \text{ of } 2 \text{ of } [100 \div 4 \text{ of } 30]}$$

$$= \sqrt{36 \div 15 \text{ of } 2 \text{ of } [100 \div 120]}$$

$$= \sqrt{36 \div 15 \text{ of } 2 \text{ of } \frac{5}{6}}$$

$$= \sqrt{\frac{36}{25}} = \frac{6}{5} = 1\frac{1}{5}$$

21. (d)

$$\left[25^2 + 8 \div 2^3 - \left\{\begin{matrix} 16 + (28 \text{ of } 7 \div 2^2) \\ -\left(18^2 \div 12^2 \text{ of } \frac{1}{8}\right) \end{matrix}\right\}\right]$$

$$= \left[625 + 8 \div 8 - \left\{\begin{matrix} 16 + (28 \text{ of } 7 \div 4) - \\ \left(324 \div 144 \text{ of } \frac{1}{8}\right) \end{matrix}\right\}\right]$$

$= [625 + 1 - \{16 + 49 - (324 \div 18)\}]$

$= [626 - \{16 + 49 - 18\}]$

$= 626 - 47 = 579$

22. (a)

$$\frac{40 - \frac{3}{4} \text{of } 32}{37 - \frac{3}{4} \text{of} (34 - 6)} = ?$$

$$\Rightarrow \frac{40 - \frac{3}{4} \times 32}{37 - \frac{3}{4} \times 28}$$

$$\Rightarrow \frac{40 - 24}{37 - 21}$$

$$\Rightarrow \frac{16}{16} = 1$$

23. (c)

$\left(5\frac{1}{4}\div\frac{3}{7}\text{of}\frac{1}{2}\right)\div\left(5\frac{1}{9}-7\frac{7}{8}\div9\frac{9}{20}\right)\times\frac{11}{21}-\left(5\div2\text{of}\frac{1}{2}\right)$

= ?

$=\left(\frac{21}{4}\div\frac{3}{7}\text{of}\frac{1}{2}\right)\div\left(\frac{46}{9}-\frac{63}{8}\div\frac{189}{20}\right)\times\frac{11}{21}-(5\div1)$

$\Rightarrow\frac{\left(\frac{21}{4}\times\frac{14}{3}\right)}{\left(\frac{46}{9}-\frac{63}{8}\times\frac{20}{189}\right)}\times\frac{11}{21}-5$

$=\frac{\frac{49}{2}}{\frac{184-30}{36}}\times\frac{11}{21}-5$

$=\frac{49\times36\times11}{2\times154\times21}-5$

$= 3 - 5 = -2$

24. (d)

$\left(5\div2\text{of}\frac{1}{2}\right)+\left(5\frac{1}{4}\div\frac{3}{7}\text{of}\frac{1}{2}\right)\div\left(5\frac{1}{9}-7\frac{7}{8}\div9\frac{9}{20}\right)\times\frac{11}{21}$

= ?

$\Rightarrow5+\left(\frac{21}{4}\div\frac{3}{14}\right)\div\left(\frac{46}{9}-\frac{63}{8}\div\frac{189}{20}\right)\times\frac{11}{21}$

$\Rightarrow5+\left(\frac{49}{2}\right)\div\left(\frac{46}{9}-\frac{63}{8}\times\frac{20}{189}\right)\times\frac{11}{21}$

$\Rightarrow5+\frac{49}{2}\div\left(\frac{46}{9}-\frac{5}{6}\right)\times\frac{11}{21}$

$\Rightarrow5+\frac{49}{2}\div\left(\frac{184-30}{36}\right)\times\frac{11}{21}$

$\Rightarrow5+\frac{49\times36}{2\times154}\times\frac{11}{21}$

$\Rightarrow 5 + 3 = 8$

25. (d)

$\frac{\left(12+5-\frac{48}{16}+71\right)+\left(\frac{\frac{72}{36}+6\times7}{11}\right)\times[(51+4-13)+(13-12\times7)]}{232}$

$\Rightarrow\frac{85+4\times-29}{232}$

$\Rightarrow\frac{85-4\times29}{232}$

$\Rightarrow\frac{85-116}{232}$

$\Rightarrow\frac{-31}{232}$

26. (c)

$\sqrt{1+\frac{x}{529}}=\frac{24}{23}$

Squaring both sides

$\Rightarrow1+\frac{x}{529}=\frac{576}{529}$

$\Rightarrow\frac{529+x}{529}=\frac{576}{529}$

$\Rightarrow x = 576 - 529$

$\Rightarrow x = 47$

27. (d)

$y + 2x - [(y - (y - x + y) - (x + y) + y]-2y$

$\Rightarrow y + 2x -(y - y + x -y) - x - y + y] - 2y$

$\Rightarrow y + 2x - [x - y - x - y + y] - 2y$

$\Rightarrow y + 2x + y - 2y = 2x$

28. (a)

$\frac{4^{a+4}-5\times4^{a+2}}{15\times4^{a}-2^{2}\times4^{a}}$

Put, a = 1

$=\frac{4^{5}-5\times4^{3}}{15\times4-4\times4}$

$=\frac{1024-320}{60-16}=\frac{704}{44}=16$

29. (a)

Check positive fraction $\frac{4}{3}\times\frac{5}{12}\Rightarrow 48 > 15$

Check negative fraction $\Rightarrow\frac{-2}{9}\times\frac{-7}{8}\Rightarrow -16 > -63$

$\therefore$ Required ascending order $\frac{-7}{8}<\frac{-2}{9}<\frac{5}{12}<\frac{4}{3}$

30. (b)

Let the three fraction are p, q and r where p > p > r

Given, $\frac{p}{r}=\frac{7}{6}$ and $q=\frac{7}{6}-\frac{1}{3}=\frac{7-2}{6}=\frac{5}{6}$

$\therefore p + q + r = 2\frac{11}{24}$

$\frac{7}{6}r + r + \frac{5}{6} + r = \frac{59}{24}$

$\frac{13r}{6}=\frac{59}{24}-\frac{5}{6}=\frac{39}{24}\Rightarrow r = \frac{39}{24}=\frac{6}{13}=\frac{3}{4}$

31. (b)

Check two fraction by cross multiplication

$\frac{2}{3}\times\frac{3}{5} \Rightarrow 10 > 9$

$\frac{2}{3}\times\frac{8}{11} \Rightarrow 22 < 24$

$\frac{8}{11}\times\frac{11}{17} \Rightarrow 136 > 121$

$\therefore$ greatest is $\frac{8}{11}$

32. (d)

Check option by option

(a) $\frac{5}{6}\times\frac{2}{3}\times\frac{8}{15} \Rightarrow \frac{5}{6} > \frac{2}{3} > \frac{8}{15}$

(b) $\frac{5}{6}\times\frac{4}{5}\times\frac{8}{15} \Rightarrow \frac{5}{6} > \frac{4}{5} > \frac{8}{15}$

(c) $\frac{5}{6}\times\frac{3}{4}\times\frac{8}{15} \Rightarrow \frac{5}{6} > \frac{3}{4} > \frac{8}{15}$

(d) $\frac{5}{6}\times\frac{6}{7}\times\frac{8}{15} \Rightarrow \frac{8}{15} > \frac{6}{7}$ does not lie between

$\frac{5}{6}$ and $\frac{18}{15}$

33. (a)

Solve the question by option

$\frac{7}{9}\xrightarrow[+2]{+2}\frac{9}{11}$

$\frac{7}{9}\xrightarrow[+3]{+3}\frac{10}{12}=\frac{5}{6}$

34. (b)

Multiply by 30 in both fractions

$\frac{5}{8}\times 30 = \frac{75}{4} = 18\frac{3}{4}$ and $\frac{7}{11}\times 30 = \frac{210}{11} = 19\frac{1}{11}$

So, option b lying between fractions

35 (b)

$0.7 + \sqrt{0.16} = 0.7 + 0.4 = 1.1$

$1.02 - \frac{0.6}{24} = 1.02 - 0.025 = 0.995$

$1.2 \times 0.83 = 0.996$

$\sqrt{1.44} = 1.2$, Hence $\sqrt{1.44}$ is greatest

36. (b)

Number are $\frac{4}{9}, \frac{3}{7}, \frac{45}{99} = \frac{5}{11}, \left(\frac{4}{5}\right)^2 = \frac{16}{25}$

Compare $\frac{4}{9}\times\frac{3}{7} \Rightarrow 28 > 27$

$\frac{3}{7}\times\frac{5}{11} \Rightarrow 33 < 35$

$\frac{3}{7}\times\frac{16}{25} \Rightarrow 75 < 112$

So $\frac{3}{7}$ is least number

37. (c)

$1 \times 2 + 2 \times 3 + 3 \times 4 + 4 \times 5 + \ldots\ldots 10 \times 11$

We know,

$\text{Sum} = \frac{n(n+1)(n+2)(n+3)}{4}$

then,

$\frac{10\times 11\times 12\times 13}{4}$

$\Rightarrow 10 \times 11 \times 39$

$\Rightarrow 390 \times 11$

$\Rightarrow 4290$

38. (c)

$5\sqrt{3} + \sqrt{75} = 17.32$

$5\sqrt{3} + 5\sqrt{3} = 10\sqrt{3} = 17.32$

$\Rightarrow \sqrt{3} = 1.732$

$\therefore 14\sqrt{3} + \sqrt{108} = 14\sqrt{3} + 6\sqrt{3}$

$= 20\sqrt{3} = 20 \times 1.732 = 34.64$

39. (d)

$\frac{1}{1\times 2} + \frac{1}{2\times 3} + \frac{1}{3\times 4} + \frac{1}{4\times 5} + \ldots\ldots + \frac{1}{8\times 9}$

$\text{Sum} = \frac{(9-1)}{9} = \frac{8}{9}$

40. (c)

$\frac{1}{20} + \frac{1}{30} + \frac{1}{42} + \frac{1}{56} + \frac{1}{72} + \frac{1}{90}$

Or

$\frac{1}{4\times 5} + \frac{1}{5\times 6} + \frac{1}{6\times 7} + \frac{1}{7\times 8} + \frac{1}{8\times 9} + \frac{1}{9\times 10}$

$\text{Sum} = \frac{(10-4)}{40} = \frac{6}{40} = \frac{3}{20}$

41. (c)

$$\frac{1}{20}+\frac{1}{30}+\frac{1}{42}+\frac{1}{56}+\frac{1}{72}+\frac{1}{90}+\frac{1}{110}+\frac{1}{132}$$

Or

$$\frac{1}{4\times5}+\frac{1}{5\times6}+\frac{1}{6\times7}+\frac{1}{7\times8}+\frac{1}{8\times9}+\frac{1}{9\times10}+\frac{1}{10\times11}$$

$$+\frac{1}{11\times12}$$

$$=\frac{12-4}{48}=\frac{8}{48}=\frac{1}{6}$$

42. (a)

$$\frac{1}{15}+\frac{1}{35}+\frac{1}{63}+\frac{1}{99}+\frac{1}{143}$$

Or

$$\frac{1}{3\times5}+\frac{1}{5\times7}+\frac{1}{7\times9}+\frac{1}{9\times11}+\frac{1}{11\times13}$$

$$\text{Sum}=\frac{10}{39}\times\frac{1}{2}=\frac{5}{39}$$

43. (c)

$$\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)\left(1-\frac{1}{5}\right).....\left(1-\frac{1}{99}\right)\left(1-\frac{1}{100}\right)$$

$$=\frac{2}{3}\times\frac{3}{4}\times\frac{4}{5}.....\frac{98}{99}\times\frac{99}{100}$$

$$=2\times\frac{1}{100}=\frac{1}{50}$$

44. (c)

$$\left(1+\frac{1}{2}\right)\left(1+\frac{1}{3}\right)\left(1+\frac{1}{4}\right).....\left(1+\frac{1}{120}\right)$$

$$=\frac{3}{2}\times\frac{4}{3}\times\frac{5}{4}.....\frac{121}{120}$$

$$=\frac{1}{2}\times121=\frac{121}{2}=60.5$$

45. (a)

$$999\times6+\frac{1+2+....+6}{7}$$

$= (1000 - 1)\ 6 + 3 = 5997$

46. (d)

$$999\frac{999}{1000}\times7$$

$7 \times 999 = 7 \times (1000 - 1) = 6993$

$$6993\frac{6993}{1000}$$

$$=6993+6\frac{993}{1000}=6999\frac{993}{1000}$$

47. (b)

$$999\frac{995}{999}\times999$$

$$\frac{995}{999}\times999$$

$$=\left(999\frac{995+4}{999}\right)\times999=999000\xrightarrow{-4}998996$$

48. (a)

$$999\frac{998}{999}\times999$$

$$=\left(999+\frac{998+1}{999}\right)\times999=999000\xrightarrow{-1}998999$$

49. (b)

$$\Rightarrow2+\frac{1}{2+\frac{1}{2+\frac{5}{11}}}\Rightarrow2+\frac{1}{2+\frac{11}{27}}\Rightarrow2+\frac{27}{65}\Rightarrow\frac{157}{65}$$

50. (a)

$$\Rightarrow2+\frac{1}{1+\frac{1}{3+\frac{5}{11}}}\Rightarrow2+\frac{1}{1+\frac{11}{38}}\Rightarrow2+\frac{38}{49}$$

$$\Rightarrow\frac{136}{49}$$

51. (c)

$$2+\frac{2}{5+\frac{15}{9}}\Rightarrow2+\frac{2\times9}{60}\Rightarrow\frac{138}{60}$$

52. (a)

$$3+\frac{9}{2+\frac{24}{15}}\Rightarrow3+\frac{9\times15}{54}\Rightarrow\frac{162+135}{54}\Rightarrow\frac{297}{54}$$

53. (c)

$$\frac{\frac{29}{7}-\frac{15}{7}}{\frac{7}{2}+\frac{8}{7}}\div\frac{1}{2+\frac{1}{2+\frac{5}{24}}}=\frac{\frac{14}{7}}{\frac{49+16}{14}}\div\frac{1}{2+\frac{24}{53}}$$

$$=\frac{2\times14}{65}\div\frac{53}{106+24}=\frac{28}{65}\times\frac{130}{53}=\frac{56}{53}$$

54. (d)

$$1-\frac{a}{1-\frac{1}{1+\frac{a}{1-a}}}$$

$$=1-\frac{a}{1-\frac{1-a}{1-a+a}}=1-\frac{a}{1-1+a}=1-1=0$$

55. (a)

$$\sqrt{\frac{\frac{29}{7}-\frac{9}{4}}{\frac{7}{2}+\frac{8}{7}}\div\frac{1}{2+\frac{1}{2+\frac{5}{24}}}}=\sqrt{\frac{53}{28}\times\frac{14}{65}\div\frac{1}{2+\frac{24}{53}}}$$

$$=\sqrt{\frac{53}{130}\div\frac{53}{130}}=1$$

56. (b)

$$A=\frac{5}{3+\frac{3}{1-\frac{2}{3}}}$$

$$=\frac{5}{3+\frac{3}{\frac{1}{3}}}=\frac{5}{3+9}=\frac{5}{12}$$

$$B=\frac{1}{3-\frac{1}{2-\frac{1}{\frac{5}{7}}}}\Rightarrow\frac{1}{3-\frac{1}{2-\frac{7}{5}}}\Rightarrow\frac{1}{3-\frac{1}{\frac{3}{5}}}$$

$$\Rightarrow\frac{1}{3-\frac{5}{3}}\Rightarrow\frac{1}{\frac{4}{3}}\Rightarrow\frac{3}{4}$$

$$A+B\Rightarrow\frac{5}{12}+\frac{3}{4}$$

$$\frac{5+9}{12}=\frac{14}{12}=\frac{7}{6}$$

57. (a)

$$A=1+\frac{1}{1+\frac{1}{1+\frac{1}{9}}}\Rightarrow1+\frac{1}{1+\frac{1}{\frac{10}{9}}}\Rightarrow1+\frac{1}{1+\frac{9}{10}}$$

$$1+\frac{10}{19}=\frac{29}{19}$$

$$B=\frac{1}{3+\frac{2}{2+\frac{1}{2}}}\Rightarrow\frac{1}{3+\frac{2}{\frac{5}{2}}}\Rightarrow\frac{1}{3+\frac{4}{5}}\Rightarrow\frac{1}{\frac{19}{5}}\Rightarrow\frac{5}{19}$$

$$19\ (A+B)\Rightarrow19\left(\frac{29}{19}+\frac{5}{19}\right)=34$$

58. (d)

$$A=\frac{1}{3+\frac{1}{1+\frac{4}{9}}}\Rightarrow\frac{1}{3+\frac{9}{13}}\Rightarrow\frac{13}{48}$$

then, $24A=\frac{13}{2}$

59. (b)

$$\frac{1}{5-\frac{1}{3-\frac{1}{5-\frac{1}{4}}}}\Rightarrow\frac{1}{5-\frac{1}{3-\frac{4}{19}}}\Rightarrow\frac{1}{5-\frac{19}{53}}$$

$$\Rightarrow\frac{53}{265-19}\Rightarrow\frac{53}{246}$$

60 (d)

Let,

A = 157 and B = 133

Given that,

$$\frac{A^2+B^2+AB}{A^3-B^3}=\frac{1}{A-B}=\frac{1}{157-133}=\frac{1}{24}$$

61 (d)

Let,

A = 0.09, B = 0.04, C = 0.16

Given that,

$$\frac{A^2+B^2+C^2+2AB+2BC+2CA}{A+B+C}$$

$$\frac{(A+B+C)^2}{A+B+C}=A+B+C=0.09+0.04+0.16=0.29$$

62. (a)

$$\frac{4913+343}{289+49-119}$$

$$=\frac{(17)^3+(7)^3}{(17)^2+(7)^2-(17\times7)}$$

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

$$=(a+b)$$

$$=(17+7)=24$$

63. (c)

$$\frac{(3.321)^3+(2.681)^3+(1.245)^3-3\times3.321\times2.681\times1.245}{(3.321)^2+(2.681)^2+(1.245)^2-(3.321\times2.681)-(2.681\times1.245)-(1.245\times3.321)}$$

This is the formula

$$\Rightarrow \frac{a^3+b^3+c^3-3abc}{a^2+b^2+c^2-ab-bc-ca} = (a+b+c)$$

$= (3.321 + 2.681 + 1.245) = 7.247$

64. (b)

$$\frac{(80\times80\times80)+(70\times70\times70)+(50\times50\times50)-840000}{6400+4900+2500-5600-3500-4000}$$

$$\Rightarrow \frac{(80)^3+(70)^3+(50)^3-3\times80\times70\times50}{(80)^2(70)^2+(50)^2-80\times70-70\times50-50\times80}$$

$= (80 + 70 + 50) = 200$

65. (a)

$$\frac{(4.2)^3-0.008}{(4.2)^3+0.84+0.04}$$

$$\Rightarrow \frac{(4.2)^3-(0.2)^3}{(4.2)^2+4.2\times0.2+(0.2)^2}$$

$= 4.2 - 0.2 = 4$

66. (c)

$$\frac{143\times143+143\times139+139\times139}{143\times143\times143-139\times139\times139}$$

Let a = 143, b = 139

$$\Rightarrow \frac{a^2+ab+b^2}{a^3-b^3}=\frac{1}{a-b}$$

$$=\frac{1}{143-139}=\frac{1}{4}$$

67. (d)

$$\frac{6.35\times6.35\times6.35+3.65\times3.65\times3.65}{6.35\times6.35+3.65\times3.65-6.35\times3.65}$$

$$\because \frac{a^3+b^3}{a^2+b^2-ab} = (a+b)$$

a = 6.35

b = 3.65

$$\Rightarrow \frac{1}{10000}[635+365] \Rightarrow \frac{1000}{10000} = 0.1$$

68. (d)

$$\frac{a^2-b^2-2bc-c^2}{a^2+b^2+2ab-c^2} = \frac{a^2-(b+c)^2}{(a+b)^2-c^2}$$

$$=\frac{[a-(b+c)][a+b+c]}{[(a+b-c)][a+b+c]}$$

$$=\frac{a-b-c}{a+b-c}$$

69. (d)

$\Rightarrow (3x + 5)^2 + (3x - 5)^2$

$\Rightarrow 2[(3x)^2 + (5)^2]$

$= 2[9x^2 + 25]$

70. (c)

Put, y = 0

$$=\frac{256x^4}{80x^2\times16x^2}=\frac{1}{5}$$

71. (a)

$$\frac{s^2+t^2+2st-u^2}{s^2-t^2-2tu-u^2}$$

$$\Rightarrow\frac{(s+t)^2-u^2}{s^2-(t+u)^2}$$

$$\Rightarrow\frac{(s+t+u)(s+t-u)}{(s-t-u)(s+t+u)}$$

$$=\frac{s+t-u}{s-t-u}$$

72. (a)

$x = y = z \Rightarrow 1$, $P=\frac{1}{1+1}=\frac{1}{2}$, $q=\frac{1}{1+1}=\frac{1}{2}$, $r=\frac{1}{1+1}=\frac{1}{2}$

$$=\frac{1}{2+2p}+\frac{1}{2+2q}+\frac{1}{2+2r}$$

$$=\frac{1}{2+1}+\frac{1}{2+1}+\frac{1}{2+1}=\frac{3}{3}=1$$

73. (d)

$$\frac{\sqrt{x}-\sqrt{y}}{\sqrt{x}+\sqrt{y}}$$

$$=\frac{\sqrt{2}-\sqrt{3}}{\sqrt{2}+\sqrt{3}}\times\frac{\sqrt{2}-\sqrt{3}}{\sqrt{2}-\sqrt{3}}$$

$$=\frac{5-2\sqrt{6}}{-1}=2\sqrt{6}-5$$

74. (b)

$1801 \times 1801 = (1801)^2$

$= (1800 + 1)^2$

$= 1800^2 + 2 \times 1800 \times 1 + 1^2$

$= 3240000 + 3600 + 1$

$= 3243601$

75. (a)

$$0.1\overline{8} \Rightarrow \frac{18-1}{90} \Rightarrow \frac{17}{90}$$

76. (b)

$0.43\overline{213} \Rightarrow \frac{43213-43}{99900} \Rightarrow \frac{43170}{99900} \Rightarrow \frac{4317}{9990}$

77. (d)

$\frac{5.7676}{-2.3333}{3.4343} = 3.\overline{43}$

78. (c)

$0.\overline{142857} \div 0.\overline{285714}$

$= \frac{142857}{999999} \div \frac{285714}{999999} = \frac{1}{2}$

79. (c)

$\left(0.\overline{11} + 0.\overline{22}\right) \times 3$

$= \left(\frac{11}{99} + \frac{22}{99}\right) \tilde{O} = \frac{33}{99} \times 33 = 1$

80. (d)

$0.\overline{39} = 0.\overline{39} = \frac{39}{99} = \frac{13}{33}$

81. (b)

$2.3\,\overline{49} = 2 + \frac{349-3}{990}$

$= 2 + \frac{346}{990} = \frac{1980+346}{990} = \frac{2326}{990}$

82. (d)

$0.5\overline{37} - 0.3\overline{35} + 0.2\overline{34}$

$= \frac{537-5}{990} - \frac{335-3}{990} + \frac{234-2}{990}$

$= \frac{532}{990} - \frac{332}{990} + \frac{232}{990} = \frac{432}{990}$

83. (b)

Let the number of oranges of Natu and Backku be x and y respectively

Given, $x + 10 = 2(y - 10) \Rightarrow x - 2y = -30$.....(i)

$y + 10 = x - 10 \Rightarrow x - y = 20$ .....(ii)

(ii) – (i) $\Rightarrow y = 50$

Hence, $x = 20 + 50 = 70$

84. (b)

Given, A + B = 120

B + C = 130

C + A = 140

On adding, $2(A + B + C) = 390 \Rightarrow A + B + C = 195$

$\therefore$ C = (A + B + C) – (A + B) = 195 – 120 = 75

85. (c)

Let number be x

Given, $3(2x + 9) = 75 \Rightarrow x = 8$

86. (a)

Let the number be x and y

Given, $x + y = 8$ and $xy = 15$

Divide both equation

$\frac{x+y}{xy} = \frac{8}{15}$

$\Rightarrow \frac{1}{y} + \frac{1}{x} = \frac{8}{15}$

87. (b)

Given, A + B = 3 (B + C) .....(i)

A + B + C = A + 30 .....(ii)

B = 5 C .....(iii)

Fom (ii)

B + C = 30

5C + C = 30 (put B = 5C)

$6C = 30 \Rightarrow C = 5$

$\therefore$ B = 30 – 5 = 25

From (i)

A + 25 = 3 × 30, A = 90 – 25 = Rs 65

88 (b)

Number of pants $= \frac{252}{2\frac{1}{2}} = \frac{252 \times 2}{5} \approx 100$

Number of shirts = $\frac{141 \times 4}{7} \approx 80$

89. (d)

Factor of 50 = 1, 2, 5, 10, 25, 50

Above person will be kept marbles

$\therefore$ Total marbles = 1 + 2 + 5 + 10 + 25 + 50 = 93

90 (d)

Let the number be $10x + y$

Then sum of number and number obtained by reversing the digits

$= 10x + y + 10y + x$

$= 11(x + 9)$

If $x + y = 11$ then number will be perfect square possible pairs are = (2, 9), (3, 8), (4, 7) and (5, 6)

8 numbers are possible