1. If $10 = 14 - y,$ then $y$ =

(a) 4 (b) –4 (c) 24 (d) –24

2. If $\frac{7x+5}{16} = 6,$ then value of x is

(a) 13 (b) $14\frac{3}{7}$ (c) –11 (d) $\frac{11}{7}$

3. For what value of P, $\frac{1}{P} + 3 = 5?$

(a) P = 1 (b) $P = \frac{1}{2}$ (c) P = –2 (d) $P = -\frac{1}{2}$

4. If one-fifth of a number is reduced by $\frac{8}{13},$ we get $\frac{24}{195},$ then the number is

(a) $\frac{48}{13}$ (b) $\frac{32}{13}$ (c) $\frac{13}{48}$ (d) $\frac{13}{32}$

5. If $-7x = 36 - 10x$, then $\frac{x}{4} =$

(a) 12 (b) 3 (c) 4 (d) $\frac{9}{17}$

6. For what value of y, we have $0.19 + 0.07y = 0.64y?$

(a) 3 (b) $\frac{1}{3}$ (c) 1.3 (d) $\frac{1}{0.3}$

7. If $(6 - x) = -19 + (x - 5),$ then x =

(a) 15 (b) 60 (c) 30 (d) None of these

8. Nitya is 17 years younger than her uncle Ram whose present age is 24 years. After how many years Ram will be twice as old as Nitya?

(a) 5 (b) 7 (c) 2 (d) 10

9. The volume of a brass piece is thrice that of an aluminium piece. The weight of brass piece is 454 gm more than that of aluminium piece. If the weight of 1 cu. cm of brass is 10.3 g and that of aluminum is 8.2 g, then volume of brass piece is

(a) 20 (b) 60 (c) 40 (d) 30

10. The digit at the ones place of a two digit number is twice the digit at tens place. If the number formed by reversing its digits is 27 more than the original number, then the number formed by reversing its digits is

(a) 36 (b) 63 (c) 45 (d) 54

11. If $\frac{4x}{5}-\frac{3x}{4}=7$, then $\frac{x}{7}=$

(a) 140 (b) 20 (c) 210 (d) 70

12. If $x-\frac{x}{2}+\frac{x}{3}-\frac{x}{4}=\frac{35}{24}$, then x =

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

13. If $\frac{x}{7}-\frac{1}{5}=\frac{1}{4}-\frac{x}{2}$, then $20x+14=$

(a) 0 (b) –14 (c) 28 (d) 1

14. If $\frac{5p}{9}-\frac{2p}{15}=\frac{p+3}{30}$, then p =

(a) $\frac{9}{35}$ (b) $\frac{9}{41}$ (c) $\frac{9}{65}$ (d) $\frac{3}{41}$

15. If one-seventh of a number is subtracted from half of it, we get 75, then the number is

(a) 30 (b) 105 (c) 420 (d) 210

16. Gauri invested one part of ` 25000 at 12% p.a. simple interest while the other part at 8% p.a. for 2 years. If the interest incurred on amount invested at 12% is ` 4000 more than the other, then the amount invested by her at 12% p.a. simple interest is

(a) ` 15000 (b) ` 10000 (c) ` 5000 (d) ` 20000

17. If $\frac{9}{x-5}=\frac{2}{5+x}$, then x =

(a) 7 (b) $-\frac{55}{7}$ (c) 0 (d) Both (a) and (b)

18. Solve: $\frac{3x-4}{3x+5}=\frac{5x-2}{5x+3}$

(a) $x=-\frac{1}{15}$ (b) $x=\frac{1}{15}$ (c) $x=-15$ (d) $x=15$

19. The numerator of a fraction is 6 less than the denominator. If 3 is added to the numerator, the fraction is equal to 2/3. What is the original fraction equal to?

(a) $\frac{6}{9}$ (b) $\frac{9}{6}$ (c) $\frac{9}{3}$ (d) $\frac{1}{3}$

20. The ratio of ages of A and B is 5 : 8. After 4 years the ratio of their ages is 7 : 10. The age of youngest of the both five years back was

(a) 10 years (b) 5 years (c) 8 years (d) 11 years

21. For a magic show, a total of 580 tickets were sold with denominators of ` 50 and ` 75. If the ratio of amount incurred by ` 50 tickets to that of ` 75 tickets is 5 : 7, then the total amount incurred is

(a) `15000 (b) `21000 (c) `30000 (d) `36000

22. The solution of the equation $ax + b = 0$ is

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

23. If $8x - 3 = 25 + 17x,$ then x is

(a) a fraction (b) an integer (c) a rational number (d) cannot be solved

24. If $\frac{5x}{3} - 4 = \frac{2x}{5},$ then the value of $2x - 7$ is

(a) $\frac{19}{13}$ (b) $-\frac{13}{19}$ (c) 0 (d) $\frac{13}{19}$

25. If a and b are positive integers, then the solution of the equation ax = b has to be always

(a) positive (b) negative (c) one (d) zero

26. Which of the following is a linear expression?

(a) $x^2 + 1$ (b) $y + y^2$ (c) 4 (d) $1 + z$

27. Value of S in $\frac{1}{3} + S = \frac{2}{5}$ is

(a) $\frac{4}{5}$ (b) $\frac{1}{15}$ (c) 10 (d) 0

28. If $\frac{-4}{3}y = -\frac{3}{4},$ then y =

(a) $-\left(\frac{3}{4}\right)^2$ (b) $-\left(\frac{4}{3}\right)^2$ (c) $\left(\frac{3}{4}\right)^2$ (d) $\left(\frac{4}{3}\right)^2$

29. Arpita's present age is thrice of Shilpa's age. Shilpa's age three years ago was x, then Arpita present age is

(a) $3(x-3)$ (b) $3x+3$ (c) $3x-3$ (d) $3(x+3)$

30. The sum of three consecutive multiples of 7 is 357. Find the smallest multiple.

(a) 112 (b) 126 (c) 119 (d) 116

In the following questions, an Assertion is followed by a Reason . Mark the correct choice.:

(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(b) If both Assertion and Reason are true but ReasonI is not the correct explanation of. Assertion

(c) If Assertion is true but Reason is false.

(d) If Assertion is false but Reason is true.

31. Assertion: 3x – 5 = 43 is a linear equation in one variable.

Reason: x = 4 is the solution of the equation 3x – 5 = 43.

32. Assertion: ax + b = 0, $a \neq 0$ is standard from of linear equation in one variable.

ReasonI: For the equation $ax+b=c,$ the solution is $x=-\frac{c}{a}.$

33. Assertion: $3(4-x)=7(1-x)+10x$ is a linear equation in one variable.

Reason: The solution to any linear equation in one variable is unique.

34. Assertion: If $\frac{y}{2}-\frac{1}{4}\left(y-\frac{1}{3}\right)=\frac{1}{6}(y+1)+\frac{1}{12},$ then y = 2.

Reason: A linear equation in one variable has two solutions.

35. Assertion: If two-third of a number is 30 less than the original number, then the number is 90.

Reason: Linear equation in one variable has only one variable with any power.