EduSahara™ Assignment

Name : Proportions Application

Chapter : Proportion

Grade : ICSE Grade X

1. If a,b,c,d,e,f are in continued proportion, then which of the following is true?

   (i) $\frac{a}{b}=\frac{b}{c}=\frac{c}{d}$ (ii) $\frac{ab}{bc}=\frac{bc}{cd}=\frac{cd}{de}$ (iii) $ab=bc=cd=de$ (iv) $\frac{a}{b}=\frac{c}{d}=\frac{e}{f}$

2. If $\frac{a}{b}=\frac{c}{d}=\frac{e}{f}$, then $\frac{(a+c+e)}{(b+d+f)}=$

   (i) 1 (ii) ace (iii) $\frac{a}{b}$ (iv) $2(a+b+c)$ (v) $(a+b+c)$

3. If $\frac{a}{b}=\frac{c}{d}$, then which of the following is true ?

   (i) $\frac{2a+4d}{2a-4d}=\frac{4b+2c}{4b-2c}$ (ii) $\frac{2a+4b}{2a-4b}=\frac{2c+4d}{2c-4d}$ (iii) $\frac{2a-3b}{2a-3d}=\frac{2c-4d}{2c-3d}$ (iv) $\frac{2a+3b}{2a-3d}=\frac{2c+4d}{2c-3d}$

4. If $\frac{x}{b-c}=\frac{y}{c-a}=\frac{z}{a-b}$, then

   (i) $ax+by+cz=1$ (ii) $ax+by-cz=0$ (iii) $ax-by-cz=0$ (iv) $ax-by+cz=0$

   (v) $ax+by+cz=0$

5. If $\frac{x+y}{ax+by}=\frac{y+z}{ay+bz}=\frac{z+x}{az+bx}$, then each of the ratios is equal to

   (i) 1 (ii) $\frac{a+b}{x+y}$ (iii) $\frac{x+y}{a+b}$ (iv) $\frac{(a+b)}{2}$ (v) $\frac{2}{(a+b)}$

6. If $\frac{a}{b+c}=\frac{b}{c+a}=\frac{c}{a+b}$ where $a+b+c\neq 0$, then each of the ratios is equal to

   (i) $(\frac{-1}{2})$ (ii) $a+b+c$ (iii) 2 (iv) $\frac{1}{2}$ (v) -1

7. If $\frac{a}{b+c}=\frac{b}{c+a}=\frac{c}{a+b}$ where $a+b+c=0$, then each of the ratios is equal to

   (i) -1 (ii) $\frac{1}{2}$ (iii) $(\frac{-1}{2})$ (iv) $a+b+c$ (v) 2

8. If 'b' is the mean proportional between 'a' and 'c', then the mean proportional between (a^2+b^2) and (b^2+c^2) is

   (i) $ab+bc+ca$ (ii) $b(a+c)$ (iii) $a(b+c)$ (iv) $c(a+b)$

9. If 'a' $\neq$ 'b' and 'a': 'b' is the duplicate ratio of ('a' + 'c') : ('b' + 'c'), then the mean proportional between 'a' and 'b' is

   (i) $2c$ (ii) $\frac{c}{2}$ (iii) c (iv) c^2

10. What least number must be added to 12 , 22 , 17 , 29 so that the resulting numbers are in proportion ?

    (i) 16 (ii) 12 (iii) 10 (iv) 13 (v) 14

11. What must be subtracted from $44, 26, 26, 17$ so that the resulting numbers are in proportion ?

(i) 8 (ii) 7 (iii) 5 (iv) 9 (v) 10

12. If 'b' is the mean proportion between 'a' and 'c', then $\frac{a^2 - b^2 + c^2}{a^{-2} - b^{-2} + c^{-2}} =$

(i) b^{-2} (ii) b^4 (iii) a^2 (iv) b^2 (v) c^2

13. If $\frac{(a^3 + 48a)}{(12a^2 + 64)} = \frac{513}{511}$, find a

(i) 4 (ii) $\frac{36}{5}$ (iii) $\frac{36}{7}$ (iv) $\frac{34}{7}$ (v) $\frac{38}{7}$

14. If $\frac{(a^3 + 75ab^2)}{(15a^2b + 125b^3)} = \frac{559}{127}$, find $a : b$

(i) 65 : -2 (ii) 65 : 4 (iii) 64 : 1 (iv) 66 : 1 (v) 65 : 1

15. If $(3x + 9), (7x + 5), (4x + 5)$ and $(8x + 10)$ are in proportion, find x

(i) $((\frac{-7}{6}), 14)$ (ii) $(15, \frac{7}{4})$ (iii) $((\frac{-3}{4}), 13)$ (iv) $((\frac{-5}{4}), 12)$ (v) $((\frac{-5}{4}), 13)$

16. If $(25x^2 - 15xy + 2y^2) = 0$, find $x : y$

(i) 2 : 5 or 1 : 5 (ii) 3 : 5 or 1 : 5 (iii) 2 : 5 or 0 : 5 (iv) 1 : 5 or 1 : 5 (v) 2 : 5 or 1 : 7

17. If $(2x + 2)$ is the geometric mean of $(x + 1)$ and $(5x + 1)$, find x

(i) $(1, 5)$ (ii) $(4, 0)$ (iii) $(3, -1)$ (iv) $(3, -2)$ (v) $(6, -1)$

18. If $7, x, 28$ are in continued proportion, find x

(i) 13 (ii) 17 (iii) 15 (iv) 12 (v) 14

19. Find the mean proportional between 1.4 and 50.4

(i) 10.4 (ii) 6.4 (iii) 8.4 (iv) 9.4 (v) 7.4

20. Find the mean proportional between $\sqrt{6}$ and $4\sqrt{6}$

(i) $2\sqrt[4]{6}$ (ii) $2\sqrt{3}$ (iii) $2\sqrt{9}$ (iv) $2\sqrt{6}$ (v) 12

21. Solve $\frac{\sqrt{(x-5)} + \sqrt{(x-1)}}{\sqrt{(x-5)} - \sqrt{(x-1)}} = \frac{9}{4}$

(i) $\frac{11}{36}$ (ii) $\frac{1}{4}$ (iii) $\frac{11}{34}$ (iv) $\frac{13}{36}$ (v) $\frac{11}{38}$

22. Find two numbers whose mean proportional is 14 and third proportional is $\frac{2401}{4}$

(i) 4 and 47 (ii) 4 and 48 (iii) 5 and 49 (iv) 4 and 49 (v) 6 and 49

Assignment Key

1) (i)	2) (iii)	3) (ii)	4) (v)	5) (v)	6) (iv)
7) (i)	8) (ii)	9) (iii)	10) (iv)	11) (i)	12) (ii)
13) (iii)	14) (v)	15) (v)	16) (i)	17) (iii)	18) (v)
19) (iii)	20) (iv)	21) (i)	22) (iv)		