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

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

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

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

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

   (i) $\frac{4a+3d}{4a-3d}=\frac{3b+4c}{3b-4c}$ (ii) $\frac{4a+3b}{4a-3b}=\frac{4c+3d}{4c-3d}$ (iii) $\frac{4a+5b}{4a-5d}=\frac{4c+3d}{4c-5d}$ (iv) $\frac{4a-5b}{4a-5d}=\frac{4c-3d}{4c-5d}$

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

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

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) 2 (v) $a+b+c$

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) $c(a+b)$ (iii) $b(a+c)$ (iv) $a(b+c)$

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

10. What least number must be added to 18 , 42 , 10 , 26 so that the resulting numbers are in proportion ?

    (i) 8 (ii) 5 (iii) 7 (iv) 3 (v) 6

11. What must be subtracted from $37, 17, 45, 20$ so that the resulting numbers are in proportion ?

(i) 5 (ii) 3 (iii) 7 (iv) 4 (v) 6

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

13. If $\frac{(a^3 + 48a)}{(12a^2 + 64)} = \frac{344}{342}$, find a

(i) 16 (ii) 6 (iii) $\frac{16}{5}$ (iv) $\frac{16}{3}$ (v) $\frac{14}{3}$

14. If $\frac{(a^3 + 75ab^2)}{(15a^2b + 125b^3)} = \frac{1072}{386}$, find $a : b$

(i) 39:1 (ii) 41:1 (iii) 40:-1 (iv) 40:1 (v) 40:3

15. If $(x+25), (3x+23), (2x+6)$ and $(4x+12)$ are in proportion, find x

(i) (-2,28) (ii) (-3,27) (iii) (-3,26) (iv) (0,27) (v) (29,-1)

16. If $(x^2 - 4xy + 4y^2) = 0$, find $x : y$

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

17. If $(13x+1)$ is the geometric mean of $(3x+1)$ and $(53x+1)$, find x

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

18. If $5, x, 80$ are in continued proportion, find x

(i) 23 (ii) 17 (iii) 21 (iv) 20 (v) 19

19. Find the mean proportional between 5.2 and 46.8

(i) 14.6 (ii) 15.6 (iii) 17.6 (iv) 13.6 (v) 16.6

20. Find the mean proportional between $\sqrt{2}$ and $2\sqrt{18}$

(i) $\sqrt{15}$ (ii) $\sqrt[4]{12}$ (iii) $\sqrt{12}$ (iv) $\sqrt{9}$ (v) 12

21. Solve $\frac{\sqrt{(x+5)} + \sqrt{(x+2)}}{\sqrt{(x+5)} - \sqrt{(x+2)}} = \frac{8}{5}$

(i) $(\frac{-291}{158})$ (ii) $(\frac{-59}{32})$ (iii) $(\frac{-291}{160})$ (iv) $(\frac{-295}{162})$ (v) $(\frac{-293}{160})$

22. Find two numbers whose mean proportional is 8 and third proportional is 64

(i) 4 and 14 (ii) 5 and 16 (iii) 4 and 16 (iv) 4 and 15 (v) 6 and 16

Assignment Key

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