



- If  $a, b, c, d, e, f$
- are in continued proportion, then which of the following is true?
    - $\frac{ab}{bc} = \frac{bc}{cd} = \frac{cd}{de}$
    - $ab = bc = cd = de$
    - $\frac{a}{b} = \frac{b}{c} = \frac{c}{d}$
    - $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$
  - If  $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$ , then  $\frac{(a+c+e)}{(b+d+f)} =$ 
    - $ace$
    - $\frac{a}{b}$
    - 1
    - $(a+b+c)$
    - $2(a+b+c)$
  - If  $\frac{a}{b} = \frac{c}{d}$ , then which of the following is true ?
    - $\frac{5a+2b}{5a-2d} = \frac{5c+4d}{5c-2d}$
    - $\frac{5a+4b}{5a-4b} = \frac{5c+4d}{5c-4d}$
    - $\frac{5a-2b}{5a-2d} = \frac{5c-4d}{5c-2d}$
    - $\frac{5a+4d}{5a-4d} = \frac{4b+5c}{4b-5c}$
  - If  $\frac{x}{b-c} = \frac{y}{c-a} = \frac{z}{a-b}$ , then
    - $ax + by - cz = 0$
    - $ax - by + cz = 0$
    - $ax + by + cz = 1$
    - $ax - by - cz = 0$
    - $ax + by + cz = 0$
  - If  $\frac{x+y}{ax+by} = \frac{y+z}{ay+bz} = \frac{z+x}{az+bx}$ , then each of the ratios is equal to
    - 1
    - $\frac{2}{(a+b)}$
    - $\frac{(a+b)}{2}$
    - $\frac{x+y}{a+b}$
    - $\frac{a+b}{x+y}$
  - 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
    - $a + b + c$
    - 1
    - $\frac{1}{2}$
    - $(\frac{-1}{2})$
    - 2
  - 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
    - $a + b + c$
    - 1
    - 2
    - $\frac{1}{2}$
    - $(\frac{-1}{2})$
  - 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
    - $b(a+c)$
    - $ab + bc + ca$
    - $c(a+b)$
    - $a(b+c)$
  - If 'a' ≠ 'b' and 'a': 'b' is the duplicate ratio of ('a' + 'c') : ('b' + 'c'), then the mean proportional between 'a' and 'b' is
    - $c^2$
    - $\frac{c}{2}$
    - c
    - 2c
  - What least number must be added to 35, 17, 17, 8 so that the resulting numbers are in proportion ?
    - (-1)
    - 0
    - 1
    - 4
    - 2

11. What must be subtracted from 23, 29, 17, 21 so that the resulting numbers are in proportion ?

- (i) 8 (ii) 4 (iii) 5 (iv) 6 (v) 2

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

13. If  $\frac{(a^3 + 75a)}{(15a^2 + 125)} = \frac{520}{504}$ , find a

- (i) 5 (ii)  $\frac{25}{3}$  (iii) 9 (iv)  $\frac{23}{3}$  (v) 25

14. If  $\frac{(a^3 + 27ab^2)}{(9a^2b + 27b^3)} = \frac{737}{721}$ , find a : b

- (i) 34:7 (ii) 33:4 (iii) 33:7 (iv) 32:7 (v) 33:10

15. If  $(x+10)$ ,  $(4x+10)$ ,  $(x+12)$  and  $(4x+16)$  are in proportion, find x

- (i) (20,20) (ii) (22,22) (iii) (23,20) (iv) (21,21) (v) (20,19)

16. If  $(3x^2 - 10xy + 8y^2) = 0$ , find x : y

- (i) 4 : 3 or 2 : 1 (ii) 5 : 3 or 2 : 1 (iii) 4 : 3 or 1 : 1 (iv) 3 : 3 or 2 : 1 (v) 4 : 3 or 2 : 3

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

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

18. If 7, x, 112 are in continued proportion, find x

- (i) 27 (ii) 30 (iii) 28 (iv) 29 (v) 26

19. Find the mean proportional between 2.1 and 18.9

- (i) 5.3 (ii) 4.3 (iii) 6.3 (iv) 8.3 (v) 7.3

20. Find the mean proportional between  $\sqrt{4}$  and 8

- (i) 3 (ii) 4 (iii) 2 (iv) 5 (v) 7

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

- (i)  $\frac{63}{16}$  (ii)  $\frac{65}{16}$  (iii)  $\frac{57}{14}$  (iv)  $\frac{67}{16}$  (v)  $\frac{73}{18}$

22. Find two numbers whose mean proportional is 10 and third proportional is  $\frac{625}{4}$

- (i) 6 and 25 (ii) 4 and 25 (iii) 5 and 25 (iv) 4 and 24 (v) 4 and 23

## Assignment Key

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