

EduSahara™ Learning Center Assignment

Grade : Class X, ICSE

Chapter : Proportion

Name : Proportions Application

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

(i) $\frac{ab}{bc} = \frac{bc}{cd} = \frac{cd}{de}$

(ii) $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$

(iii) $ab = bc = cd = de$

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

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

(i) $\frac{5a - 3b}{5a - 3d} = \frac{5c - 2d}{5c - 3d}$ (ii) $\frac{5a + 3b}{5a - 3d} = \frac{5c + 2d}{5c - 3d}$

(iii) $\frac{5a + 2d}{5a - 2d} = \frac{2b + 5c}{2b - 5c}$ (iv) $\frac{5a + 2b}{5a - 2b} = \frac{5c + 2d}{5c - 2d}$

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

(i) $ax + by - cz = 0$

(ii) $ax + by + cz = 1$

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

$$x+y \quad 2 \quad (a+b) \quad a+b$$

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

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) 2 (ii) $(-\frac{1}{2})$ (iii) -1 (iv) $\frac{1}{2}$ (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) $b(a+c)$ (ii) $c(a+b)$ (iii) $ab + bc + ca$ (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^2 (ii) c (iii) $2c$ (iv) $\frac{c}{2}$

10. What least number must be added to 29, 11, 19, 7
so that the resulting numbers are in proportion?

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

11. What must be subtracted from 19, 16, 24, 20
so that the resulting numbers are in proportion?

(i) 6 (ii) 5 (iii) 1 (iv) 4 (v) 3

If 'b' is the mean proportion between 'a' and 'c',

12. then $\frac{a^2 - b^2 + c^2}{a^{-2} - b^{-2} + c^{-2}} =$

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

13. If $\frac{(a^3 + 12a)}{(6a^2 + 8)} = \frac{133}{117}$, find a

(i) 14 (ii) 4 (iii) $\frac{14}{5}$ (iv) $\frac{16}{3}$ (v) $\frac{14}{3}$

14. If $\frac{(a^3 + 27ab^2)}{(9a^2b + 27b^3)} = \frac{407}{279}$, find $a : b$

- (i) $11 : -2$ (ii) $11 : 1$ (iii) $11 : 4$ (iv) $10 : 1$ (v) $12 : 1$
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15. If $(x + 12)$, $(x + 34)$, $(2x + 6)$ and $(2x + 44)$ are in proportion, find x

- (i) $(54, 54)$ (ii) $(54, 53)$ (iii) $(56, 54)$
(iv) $(55, 55)$ (v) $(56, 56)$
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16. If $(5x^2 - 26xy + 5y^2) = 0$, find $x : y$

- (i) $4 : 1$ or $1 : 5$ (ii) $6 : 1$ or $1 : 5$ (iii) $5 : 1$ or $0 : 5$
(iv) $5 : 1$ or $1 : 5$ (v) $5 : 1$ or $1 : 8$
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17. If $(7x + 2)$ is the geometric mean of $(x + 2)$ and $(37x + 2)$, find x

- (i) $(6, 2)$ (ii) $(1, 5)$ (iii) $(0, 4)$
(iv) $(0, 3)$ (v) $(3, 4)$
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18. If $6, x, 150$ are in continued proportion, find x

- (i) 29 (ii) 33 (iii) 31 (iv) 30 (v) 27
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19. Find the mean proportional between 3.6 and 14.4

- (i) 8.2 (ii) 7.2 (iii) 9.2 (iv) 6.2 (v) 5.2
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20. Find the mean proportional between $\sqrt{2}$ and $\sqrt{18}$

- (i) 6 (ii) $\sqrt{6}$ (iii) $4\sqrt{6}$ (iv) $\sqrt{8}$ (v) $\sqrt{4}$
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21. Solve $\frac{\sqrt{x+3} + \sqrt{x+1}}{\sqrt{x+3} - \sqrt{x+1}} = \frac{5}{4}$

- (i) $(\frac{-41}{40})$ (ii) $(\frac{-39}{40})$ (iii) $(\frac{-39}{38})$ (iv) $(\frac{-37}{40})$ (v) $(\frac{-13}{14})$
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22. Find two numbers whose mean proportional is 12
and third proportional is 324

(i) 4 and 36 (ii) 4 and 34 (iii) 6 and 36

(iv) 4 and 35 (v) 5 and 36

Assignment Key

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