EduSahara™ Assignment

Name : Proportion Concepts

Chapter : Proportion

Grade : ICSE Grade X

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1. Find the product of extremes of $5:8$ and $8:6$

   (i) 33 (ii) 64 (iii) 29 (iv) 30 (v) 27

2. Find the product of extremes of $\frac{9}{20}:\frac{16}{17}$ and $\frac{5}{3}:\frac{11}{6}$

   (i) $\frac{33}{40}$ (ii) $\frac{33}{38}$ (iii) $\frac{7}{8}$ (iv) $\frac{80}{51}$ (v) $\frac{31}{40}$

3. Find the product of means of $5:20$ and $1:12$

   (i) 19 (ii) 60 (iii) 18 (iv) 22 (v) 20

4. Find the product of means of $\frac{5}{19}:\frac{19}{7}$ and $\frac{1}{18}:\frac{7}{17}$

   (i) $\frac{35}{323}$ (ii) $\frac{19}{124}$ (iii) $\frac{17}{126}$ (iv) $\frac{19}{126}$ (v) $\frac{1}{6}$

5. Find the mean proportional of 72 and 2

   (i) 9 (ii) 12 (iii) 72 (iv) 2 (v) 144

6. Find the third proportional of 98 and 14

   (i) 98 (ii) 14 (iii) 196 (iv) 0 (v) 2

7. Find the fourth proportional of $42, 7$ and 18

   (i) 18 (ii) 7 (iii) 0 (iv) 3 (v) 6

8. Which of the ratios is proportional to 36 : 6?

   (i) $17:3$ (ii) $18:0$ (iii) $18:5$ (iv) $18:3$ (v) $19:3$

9. Invertendo of $\frac{15}{3}=\frac{30}{6}$

   (i) $\frac{12}{3}=\frac{24}{6}$ (ii) $\frac{18}{12}=\frac{36}{24}$ (iii) $\frac{15}{30}=\frac{3}{6}$ (iv) $\frac{3}{15}=\frac{6}{30}$ (v) $\frac{18}{3}=\frac{36}{6}$

10. Alternendo of $\frac{11}{20}=\frac{154}{280}$

    (i) $\frac{20}{11}=\frac{280}{154}$ (ii) $\frac{11}{154}=\frac{20}{280}$ (iii) $\frac{9}{20}=\frac{126}{280}$ (iv) $\frac{31}{9}=\frac{434}{126}$ (v) $\frac{31}{20}=\frac{434}{280}$

11. Componendo of $\frac{3}{14}=\frac{12}{56}$

    (i) $\frac{14}{3}=\frac{56}{12}$ (ii) $\frac{17}{14}=\frac{68}{56}$ (iii) $\frac{3}{12}=\frac{14}{56}$ (iv) $\frac{11}{14}=\frac{44}{56}$ (v) $\frac{17}{11}=\frac{68}{44}$

12. Dividendo of $\frac{4}{16}=\frac{12}{48}$

(i) $\frac{12}{16}=\frac{36}{48}$ (ii) $\frac{20}{16}=\frac{60}{48}$ (iii) $\frac{4}{12}=\frac{16}{48}$ (iv) $\frac{20}{12}=\frac{60}{36}$ (v) $\frac{16}{4}=\frac{48}{12}$

13. Componendo and dividendo of $\frac{2}{17}=\frac{12}{102}$

(i) $\frac{19}{15}=\frac{114}{90}$ (ii) $\frac{19}{17}=\frac{114}{102}$ (iii) $\frac{15}{17}=\frac{90}{102}$ (iv) $\frac{2}{12}=\frac{17}{102}$ (v) $\frac{17}{2}=\frac{102}{12}$

14. Invertendo of $\frac{c}{z}=\frac{s}{g}$

(i) $\frac{c}{s}=\frac{z}{g}$ (ii) $\frac{c-z}{z}=\frac{s-g}{g}$ (iii) $\frac{z}{c}=\frac{g}{s}$ (iv) $\frac{c+z}{z}=\frac{s+g}{g}$ (v) $\frac{c+z}{c-z}=\frac{s+g}{s-g}$

15. Alternendo of $\frac{a}{g}=\frac{v}{s}$

(i) $\frac{a-g}{g}=\frac{v-s}{s}$ (ii) $\frac{g}{a}=\frac{s}{v}$ (iii) $\frac{a}{v}=\frac{g}{s}$ (iv) $\frac{a+g}{g}=\frac{v+s}{s}$ (v) $\frac{a+g}{a-g}=\frac{v+s}{v-s}$

16. Componendo of $\frac{u}{z}=\frac{w}{x}$

(i) $\frac{u+z}{u-z}=\frac{w+x}{w-x}$ (ii) $\frac{z}{u}=\frac{x}{w}$ (iii) $\frac{u-z}{z}=\frac{w-x}{x}$ (iv) $\frac{u+z}{z}=\frac{w+x}{x}$ (v) $\frac{u}{w}=\frac{z}{x}$

17. Dividendo of $\frac{i}{c}=\frac{e}{p}$

(i) $\frac{i-c}{c}=\frac{e-p}{p}$ (ii) $\frac{i}{e}=\frac{c}{p}$ (iii) $\frac{i+c}{i-c}=\frac{e+p}{e-p}$ (iv) $\frac{i+c}{c}=\frac{e+p}{p}$ (v) $\frac{c}{i}=\frac{p}{e}$

18. Componendo and Dividendo of $\frac{a}{p}=\frac{o}{k}$

(i) $\frac{a-p}{p}=\frac{o-k}{k}$ (ii) $\frac{a+p}{a-p}=\frac{o+k}{o-k}$ (iii) $\frac{a+p}{p}=\frac{o+k}{k}$ (iv) $\frac{a}{o}=\frac{p}{k}$ (v) $\frac{p}{a}=\frac{k}{o}$

19. Invertendo of $r:m::x:s$

(i) $r:x::m:s$ (ii) $r+m:r-m::x+s:x-s$ (iii) $m:r::s:x$ (iv) $r-m:m::x-s:s$ (v) $r+m:m::x+s:s$

20. Alternendo of $d:v::q:l$

(i) $d+v:v::q+l:l$ (ii) $d+v:d-v::q+l:q-l$ (iii) $d-v:v::q-l:l$ (iv) $v:d::l:q$ (v) $d:q::v:l$

21. Componendo of $u:k::j:q$

(i) $k:u::q:j$ (ii) $u:j::k:q$ (iii) $u+k:k::j+q:q$ (iv) $u+k:u-k::j+q:j-q$ (v) $u-k:k::j-q:q$

22. Dividendo of $l:n::j:q$

(i) $l:j::n:q$ (ii) $l+n:n::j+q:q$ (iii) $l+n:l-n::j+q:j-q$ (iv) $l-n:n::j-q:q$ (v) $n:l::q:j$

23. Componendo and Dividendo of $l:w::m:s$

(i) $l+w:l-w::m+s:m-s$ (ii) $w:l::s:m$ (iii) $l-w:w::m-s:s$ (iv) $l+w:w::m+s:s$ (v) $l:m::w:s$

24. If $a:b::c:d$, then

(i) $ab = cd$ (ii) $ac = bd$ (iii) $ad = bc$ (iv) $abc = bcd$

25. The ratio 3 : 5 is proportional to which of the following ratios?

(i) $12:15$ (ii) $6:30$ (iii) $18:10$ (iv) $15:25$ (v) $9:20$

26. Which of the following represents a proportion ?

(i) $22:34::88:102$ (ii) $26:38::78:76$ (iii) $24:36::48:72$ (iv) $25:37::50:111$ (v) $23:35::69:140$

27. Which of the following does not represent a proportion ?

(i) $16:12::80:60$ (ii) $24:21::48:42$ (iii) $6:5::12:15$ (iv) $15:12::60:48$ (v) $14:12::42:36$

28. If $a:b::c:d$, then 'a' is called

(i) mean proportional (ii) third proportional (iii) extreme (iv) fourth proportional (v) second term

29. If $a:b::b:c$, then 'b' is called

(i) third proportional (ii) mean proportional (iii) fourth proportional (iv) first term (v) extreme

30. If $a:b::b:c$, then 'c' is called

(i) first term (ii) second term (iii) third proportional (iv) mean proportional

31. If $a:b::b:c$, then the mean proportional is

(i) bc (ii) a (iii) b (iv) ac (v) c

32. 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) $\frac{a}{b}=\frac{b}{c}=\frac{c}{d}$

33. If $12:15::x:30$, find 'x'

(i) 25 (ii) 24 (iii) 21 (iv) 27 (v) 23

34. Find the fourth proportional of 15, 12, 30

(i) 27 (ii) 21 (iii) 25 (iv) 24 (v) 23

35. Find the third proportional of 2 and 14

(i) 100 (ii) 97 (iii) 98 (iv) 95 (v) 99

36. Find the mean proportional of 8 and 128

(i) 34 (ii) 33 (iii) 31 (iv) 30 (v) 32

37. If $4, x, 36$ are in continued proportion, find x

(i) 14 (ii) 13 (iii) 12 (iv) 10 (v) 11

38. Find the mean proportional between 1.2 and 4.8

(i) 1.4 (ii) 0.4 (iii) 3.4 (iv) 2.4 (v) 4.4

39. Find the mean proportional between $\sqrt{2}$ and $4\sqrt{2}$

(i) $2\sqrt[4]{2}$ (ii) $2\sqrt{2}$ (iii) 4 (iv) $2\sqrt{-1}$ (v) $2\sqrt{5}$

40. Invertendo of $\frac{8}{9}=\frac{48}{54}$

(i) $\frac{17}{1}=\frac{102}{6}$ (ii) $\frac{17}{9}=\frac{102}{54}$ (iii) $\frac{9}{8}=\frac{54}{48}$ (iv) $\frac{8}{48}=\frac{9}{54}$ (v) $\frac{1}{9}=\frac{6}{54}$

41. Alternendo of $\frac{5}{7}=\frac{40}{56}$

(i) $\frac{2}{7}=\frac{16}{56}$ (ii) $\frac{12}{7}=\frac{96}{56}$ (iii) $\frac{5}{40}=\frac{7}{56}$ (iv) $\frac{12}{2}=\frac{96}{16}$ (v) $\frac{7}{5}=\frac{56}{40}$

42. Componendo of $\frac{7}{5}=\frac{49}{35}$

(i) $\frac{5}{7}=\frac{35}{49}$ (ii) $\frac{12}{2}=\frac{84}{14}$ (iii) $\frac{2}{5}=\frac{14}{35}$ (iv) $\frac{7}{49}=\frac{5}{35}$ (v) $\frac{12}{5}=\frac{84}{35}$

43. Dividendo of $\frac{9}{7}=\frac{27}{21}$

(i) $\frac{16}{7}=\frac{48}{21}$ (ii) $\frac{9}{27}=\frac{7}{21}$ (iii) $\frac{2}{7}=\frac{6}{21}$ (iv) $\frac{7}{9}=\frac{21}{27}$ (v) $\frac{16}{2}=\frac{48}{6}$

44. Componendo and Dividendo of $\frac{6}{2}=\frac{18}{6}$

(i) $\frac{4}{2}=\frac{12}{6}$ (ii) $\frac{8}{4}=\frac{24}{12}$ (iii) $\frac{8}{2}=\frac{24}{6}$ (iv) $\frac{2}{6}=\frac{6}{18}$ (v) $\frac{6}{18}=\frac{2}{6}$

45. Invertendo of 2:3::6:9

(i) 2:6::3:9 (ii) 3:2::9:6 (iii) 1:3::3:9 (iv) 5:3::15:9 (v) 5:1::15:3

46. Alternendo of 4:6::28:42

(i) 6:4::42:28 (ii) 10:2::70:14 (iii) 2:6::14:42 (iv) 10:6::70:42 (v) 4:28::6:42

47. Componendo of 2:8::14:56

(i) 10:8::70:56 (ii) 8:2::56:14 (iii) 6:8::42:56 (iv) 10:6::70:42 (v) 2:14::8:56

48. Dividendo of 5:3::35:21

(i) 2:3::14:21 (ii) 5:35::3:21 (iii) 8:2::56:14 (iv) 3:5::21:35 (v) 8:3::56:21

49. Componendo and Dividendo of 6:5::30:25

(i) 5:6::25:30 (ii) 11:5::55:25 (iii) 11:1::55:5 (iv) 1:5::5:25 (v) 6:30::5:25

Assignment Key

1) (iv)	2) (i)	3) (v)	4) (iv)	5) (ii)	6) (v)
7) (iv)	8) (iv)	9) (iv)	10) (ii)	11) (ii)	12) (i)
13) (i)	14) (iii)	15) (iii)	16) (iv)	17) (i)	18) (ii)
19) (iii)	20) (v)	21) (iii)	22) (iv)	23) (i)	24) (iii)
25) (iv)	26) (iii)	27) (iii)	28) (iii)	29) (ii)	30) (iii)
31) (iii)	32) (iv)	33) (ii)	34) (iv)	35) (iii)	36) (v)
37) (iii)	38) (iv)	39) (ii)	40) (iii)	41) (iii)	42) (v)
43) (iii)	44) (ii)	45) (ii)	46) (v)	47) (i)	48) (i)
49) (iii)					

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