EduSahara™ Assignment

Name : Proportion Concepts

Chapter : Proportion

Grade : ICSE Grade X

License : Non Commercial Use

1. Find the product of extremes of $15:19$ and $12:5$

   (i) 75 (ii) 73 (iii) 228 (iv) 77 (v) 74

2. Find the product of extremes of $\frac{7}{12}:\frac{11}{3}$ and $\frac{15}{13}:\frac{16}{13}$

   (i) $\frac{2}{3}$ (ii) $\frac{28}{39}$ (iii) $\frac{55}{13}$ (iv) $\frac{28}{37}$ (v) $\frac{10}{13}$

3. Find the product of means of $14:7$ and $20:8$

   (i) 112 (ii) 140 (iii) 142 (iv) 137 (v) 139

4. Find the product of means of $\frac{13}{3}:\frac{18}{13}$ and $\frac{12}{17}:\frac{8}{9}$

   (i) $\frac{72}{73}$ (ii) $\frac{104}{27}$ (iii) $\frac{214}{221}$ (iv) $\frac{218}{221}$ (v) $\frac{216}{221}$

5. Find the mean proportional of 8 and 2

   (i) 4 (ii) 16 (iii) 2 (iv) 1 (v) 8

6. Find the third proportional of 162 and 18

   (i) 324 (ii) 18 (iii) 2 (iv) 162 (v) (-1)

7. Find the fourth proportional of $18, 3$ and 18

   (i) 1 (ii) 18 (iii) 3 (iv) 6

8. Which of the ratios is proportional to 36 : 9?

   (i) $24:6$ (ii) $23:6$ (iii) $25:6$ (iv) $24:3$ (v) $24:9$

9. Invertendo of $\frac{15}{4}=\frac{150}{40}$

   (i) $\frac{11}{4}=\frac{110}{40}$ (ii) $\frac{4}{15}=\frac{40}{150}$ (iii) $\frac{15}{150}=\frac{4}{40}$ (iv) $\frac{19}{11}=\frac{190}{110}$ (v) $\frac{19}{4}=\frac{190}{40}$

10. Alternendo of $\frac{13}{12}=\frac{117}{108}$

    (i) $\frac{25}{1}=\frac{225}{9}$ (ii) $\frac{13}{117}=\frac{12}{108}$ (iii) $\frac{12}{13}=\frac{108}{117}$ (iv) $\frac{25}{12}=\frac{225}{108}$ (v) $\frac{1}{12}=\frac{9}{108}$

11. Componendo of $\frac{12}{8}=\frac{96}{64}$

    (i) $\frac{20}{8}=\frac{160}{64}$ (ii) $\frac{20}{4}=\frac{160}{32}$ (iii) $\frac{4}{8}=\frac{32}{64}$ (iv) $\frac{8}{12}=\frac{64}{96}$ (v) $\frac{12}{96}=\frac{8}{64}$

12. Dividendo of $\frac{17}{16}=\frac{34}{32}$

(i) $\frac{16}{17}=\frac{32}{34}$ (ii) $\frac{33}{1}=\frac{66}{2}$ (iii) $\frac{33}{16}=\frac{66}{32}$ (iv) $\frac{1}{16}=\frac{2}{32}$ (v) $\frac{17}{34}=\frac{16}{32}$

13. Componendo and dividendo of $\frac{1}{10}=\frac{3}{30}$

(i) $\frac{10}{1}=\frac{30}{3}$ (ii) $\frac{1}{3}=\frac{10}{30}$ (iii) $\frac{11}{9}=\frac{33}{27}$ (iv) $\frac{9}{10}=\frac{27}{30}$ (v) $\frac{11}{10}=\frac{33}{30}$

14. Invertendo of $\frac{l}{g}=\frac{n}{a}$

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

15. Alternendo of $\frac{d}{s}=\frac{p}{i}$

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

16. Componendo of $\frac{y}{d}=\frac{q}{t}$

(i) $\frac{y-d}{d}=\frac{q-t}{t}$ (ii) $\frac{y+d}{y-d}=\frac{q+t}{q-t}$ (iii) $\frac{d}{y}=\frac{t}{q}$ (iv) $\frac{y+d}{d}=\frac{q+t}{t}$ (v) $\frac{y}{q}=\frac{d}{t}$

17. Dividendo of $\frac{z}{v}=\frac{j}{i}$

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

18. Componendo and Dividendo of $\frac{j}{e}=\frac{o}{i}$

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

19. Invertendo of $p:c::d:q$

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

20. Alternendo of $f:q::g:k$

(i) $f+q:q::g+k:k$ (ii) $f:g::q:k$ (iii) $f+q:f-q::g+k:g-k$ (iv) $f-q:q::g-k:k$ (v) $q:f::k:g$

21. Componendo of $v:s::j:u$

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

22. Dividendo of $p:b::l:n$

(i) $p+b:p-b::l+n:l-n$ (ii) $b:p::n:l$ (iii) $p-b:b::l-n:n$ (iv) $p+b:b::l+n:n$ (v) $p:l::b:n$

23. Componendo and Dividendo of $y:v::n:o$

(i) $y+v:y-v::n+o:n-o$ (ii) $y-v:v::n-o:o$ (iii) $y:n::v:o$ (iv) $v:y::o:n$ (v) $y+v:v::n+o:o$

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

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

25. The ratio 2 : 4 is proportional to which of the following ratios?

(i) 6:8 (ii) 12:16 (iii) 4:12 (iv) 10:20 (v) 8:24

26. Which of the following represents a proportion ?

(i) 37:44::111:88 (ii) 33:40::132:120 (iii) 35:42::105:126 (iv) 34:41::102:164 (v) 36:43::72:129

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

(i) 6:4::12:12 (ii) 15:9::60:36 (iii) 24:18::48:36 (iv) 14:10::42:30 (v) 16:8::80:40

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

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

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

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

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

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

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

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

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

33. If $25:30::30:x$, find 'x'

(i) 36 (ii) 37 (iii) 35 (iv) 38 (v) 34

34. Find the fourth proportional of 20, 15, 24

(i) 15 (ii) 21 (iii) 18 (iv) 19 (v) 17

35. Find the third proportional of 81 and 9

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

36. Find the mean proportional of 5 and 20

(i) 13 (ii) 10 (iii) 9 (iv) 8 (v) 11

37. If $1, x, 9$ are in continued proportion, find x

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

38. Find the mean proportional between 3.3 and 52.8

(i) 13.2 (ii) 12.2 (iii) 14.2 (iv) 11.2 (v) 15.2

39. Find the mean proportional between $\sqrt{3}$ and $\sqrt{147}$

(i) $\sqrt[4]{21}$ (ii) $\sqrt{18}$ (iii) 21 (iv) $\sqrt{23}$ (v) $\sqrt{21}$

40. Invertendo of $\frac{6}{7}=\frac{30}{35}$

(i) $\frac{13}{1}=\frac{65}{5}$ (ii) $\frac{7}{6}=\frac{35}{30}$ (iii) $\frac{6}{30}=\frac{7}{35}$ (iv) $\frac{1}{7}=\frac{5}{35}$ (v) $\frac{13}{7}=\frac{65}{35}$

41. Alternendo of $\frac{3}{5}=\frac{12}{20}$

(i) $\frac{5}{3}=\frac{20}{12}$ (ii) $\frac{8}{5}=\frac{32}{20}$ (iii) $\frac{2}{5}=\frac{8}{20}$ (iv) $\frac{8}{2}=\frac{32}{8}$ (v) $\frac{3}{12}=\frac{5}{20}$

42. Componendo of $\frac{3}{4}=\frac{21}{28}$

(i) $\frac{7}{4}=\frac{49}{28}$ (ii) $\frac{4}{3}=\frac{28}{21}$ (iii) $\frac{3}{21}=\frac{4}{28}$ (iv) $\frac{7}{1}=\frac{49}{7}$ (v) $\frac{1}{4}=\frac{7}{28}$

43. Dividendo of $\frac{8}{3}=\frac{48}{18}$

(i) $\frac{11}{3}=\frac{66}{18}$ (ii) $\frac{8}{48}=\frac{3}{18}$ (iii) $\frac{3}{8}=\frac{18}{48}$ (iv) $\frac{11}{5}=\frac{66}{30}$ (v) $\frac{5}{3}=\frac{30}{18}$

44. Componendo and Dividendo of $\frac{5}{3}=\frac{30}{18}$

(i) $\frac{5}{30}=\frac{3}{18}$ (ii) $\frac{3}{5}=\frac{18}{30}$ (iii) $\frac{8}{2}=\frac{48}{12}$ (iv) $\frac{8}{3}=\frac{48}{18}$ (v) $\frac{2}{3}=\frac{12}{18}$

45. Invertendo of 4:7::20:35

(i) 4:20::7:35 (ii) 7:4::35:20 (iii) 11:3::55:15 (iv) 3:7::15:35 (v) 11:7::55:35

46. Alternendo of 6:9::24:36

(i) 3:9::12:36 (ii) 15:9::60:36 (iii) 9:6::36:24 (iv) 15:3::60:12 (v) 6:24::9:36

47. Componendo of 2:3::4:6

(i) 3:2::6:4 (ii) 5:1::10:2 (iii) 1:3::2:6 (iv) 5:3::10:6 (v) 2:4::3:6

48. Dividendo of 9:8::72:64

(i) 1:8::8:64 (ii) 8:9::64:72 (iii) 17:1::136:8 (iv) 9:72::8:64 (v) 17:8::136:64

49. Componendo and Dividendo of 3:8::12:32

(i) 8:3::32:12 (ii) 3:12::8:32 (iii) 11:8::44:32 (iv) 11:5::44:20 (v) 5:8::20:32

Assignment Key

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

Copyright © Small Systems Computing Pvt. Ltd.