EduSahara™ Assignment

Name : Proportion Concepts

Chapter : Proportion

Grade : ICSE Grade X

1. Find the product of extremes of $7:3$ and $16:13$

   (i) 91 (ii) 88 (iii) 93 (iv) 48 (v) 90

2. Find the product of extremes of $\frac{9}{20}:\frac{11}{3}$ and $\frac{14}{9}:\frac{19}{12}$

   (i) $\frac{19}{26}$ (ii) $\frac{11}{16}$ (iii) $\frac{57}{80}$ (iv) $\frac{59}{80}$ (v) $\frac{154}{27}$

3. Find the product of means of $14:17$ and $1:17$

   (i) 20 (ii) 14 (iii) 16 (iv) 17 (v) 238

4. Find the product of means of $\frac{11}{16}:\frac{11}{5}$ and $\frac{13}{17}:\frac{13}{14}$

   (i) $\frac{143}{85}$ (ii) $\frac{29}{17}$ (iii) $\frac{143}{83}$ (iv) $\frac{141}{85}$ (v) $\frac{143}{224}$

5. Find the mean proportional of 18 and 2

   (i) 18 (ii) 4 (iii) 6 (iv) 36 (v) 2

6. Find the third proportional of 8 and 4

   (i) 2 (ii) 4 (iii) 0 (iv) 8 (v) 16

7. Find the fourth proportional of $30, 5$ and 36

   (i) 5 (ii) 36 (iii) 9 (iv) 3 (v) 6

8. Which of the ratios is proportional to 32 : 8?

   (i) $37:9$ (ii) $36:9$ (iii) $36:6$ (iv) $36:12$ (v) $35:9$

9. Invertendo of $\frac{7}{17}=\frac{77}{187}$

   (i) $\frac{10}{17}=\frac{110}{187}$ (ii) $\frac{7}{77}=\frac{17}{187}$ (iii) $\frac{24}{17}=\frac{264}{187}$ (iv) $\frac{17}{7}=\frac{187}{77}$ (v) $\frac{24}{10}=\frac{264}{110}$

10. Alternendo of $\frac{13}{1}=\frac{91}{7}$

    (i) $\frac{14}{1}=\frac{98}{7}$ (ii) $\frac{12}{1}=\frac{84}{7}$ (iii) $\frac{13}{91}=\frac{1}{7}$ (iv) $\frac{1}{13}=\frac{7}{91}$ (v) $\frac{14}{12}=\frac{98}{84}$

11. Componendo of $\frac{9}{8}=\frac{99}{88}$

    (i) $\frac{17}{1}=\frac{187}{11}$ (ii) $\frac{1}{8}=\frac{11}{88}$ (iii) $\frac{8}{9}=\frac{88}{99}$ (iv) $\frac{17}{8}=\frac{187}{88}$ (v) $\frac{9}{99}=\frac{8}{88}$

12. Dividendo of $\frac{9}{17}=\frac{45}{85}$

(i) $\frac{17}{9}=\frac{85}{45}$ (ii) $\frac{8}{17}=\frac{40}{85}$ (iii) $\frac{26}{17}=\frac{130}{85}$ (iv) $\frac{26}{8}=\frac{130}{40}$ (v) $\frac{9}{45}=\frac{17}{85}$

13. Componendo and dividendo of $\frac{7}{11}=\frac{77}{121}$

(i) $\frac{18}{4}=\frac{198}{44}$ (ii) $\frac{11}{7}=\frac{121}{77}$ (iii) $\frac{4}{11}=\frac{44}{121}$ (iv) $\frac{7}{77}=\frac{11}{121}$ (v) $\frac{18}{11}=\frac{198}{121}$

14. Invertendo of $\frac{j}{e}=\frac{c}{u}$

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

15. Alternendo of $\frac{t}{u}=\frac{z}{c}$

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

16. Componendo of $\frac{a}{h}=\frac{r}{z}$

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

17. Dividendo of $\frac{v}{f}=\frac{h}{t}$

(i) $\frac{f}{v}=\frac{t}{h}$ (ii) $\frac{v}{h}=\frac{f}{t}$ (iii) $\frac{v+f}{v-f}=\frac{h+t}{h-t}$ (iv) $\frac{v+f}{f}=\frac{h+t}{t}$ (v) $\frac{v-f}{f}=\frac{h-t}{t}$

18. Componendo and Dividendo of $\frac{t}{c}=\frac{p}{u}$

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

19. Invertendo of $z:w::r:t$

(i) $z-w:w::r-t:t$ (ii) $z+w:z-w::r+t:r-t$ (iii) $w:z::t:r$ (iv) $z:r::w:t$ (v) $z+w:w::r+t:t$

20. Alternendo of $c:z::k:y$

(i) $c+z:z::k+y:y$ (ii) $c+z:c-z::k+y:k-y$ (iii) $c:k::z:y$ (iv) $c-z:z::k-y:y$ (v) $z:c::y:k$

21. Componendo of $d:t::h:i$

(i) $d+t:t::h+i:i$ (ii) $t:d::i:h$ (iii) $d-t:t::h-i:i$ (iv) $d+t:d-t::h+i:h-i$ (v) $d:h::t:i$

22. Dividendo of $h:r::j:i$

(i) $h-r:r::j-i:i$ (ii) $h+r:h-r::j+i:j-i$ (iii) $h+r:r::j+i:i$ (iv) $h:j::r:i$ (v) $r:h::i:j$

23. Componendo and Dividendo of $h:o::c:g$

(i) $o:h::g:c$ (ii) $h-o:o::c-g:g$ (iii) $h:c::o:g$ (iv) $h+o:h-o::c+g:c-g$ (v) $h+o:o::c+g:g$

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

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

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

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

26. Which of the following represents a proportion ?

(i) 25:31::50:93 (ii) 22:28::88:84 (iii) 24:30::120:150 (iv) 26:32::78:64 (v) 23:29::69:116

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

(i) 8:12::40:60 (ii) 18:21::36:42 (iii) 10:12::30:36 (iv) 4:5::8:15 (v) 9:12::36:48

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

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

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

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

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

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

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

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

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 $x:18::12:24$, find 'x'

(i) 9 (ii) 10 (iii) 12 (iv) 8 (v) 6

34. Find the fourth proportional of 24, 36, 12

(i) 18 (ii) 16 (iii) 17 (iv) 21 (v) 19

35. Find the third proportional of 10 and 10

(i) 12 (ii) 11 (iii) 9 (iv) 8 (v) 10

36. Find the mean proportional of 10 and 90

(i) 28 (ii) 33 (iii) 31 (iv) 29 (v) 30

37. If $6, x, 150$ are in continued proportion, find x

(i) 32 (ii) 28 (iii) 30 (iv) 31 (v) 29

38. Find the mean proportional between 2.4 and 86.4

(i) 16.4 (ii) 15.4 (iii) 13.4 (iv) 14.4 (v) 12.4

39. Find the mean proportional between $\sqrt{9}$ and 18

(i) $3\sqrt{4}$ (ii) $3\sqrt{6}$ (iii) $3\sqrt[4]{6}$ (iv) $3\sqrt{9}$ (v) 18

40. Invertendo of $\frac{2}{5}=\frac{10}{25}$

(i) $\frac{7}{5}=\frac{35}{25}$ (ii) $\frac{7}{3}=\frac{35}{15}$ (iii) $\frac{3}{5}=\frac{15}{25}$ (iv) $\frac{5}{2}=\frac{25}{10}$ (v) $\frac{2}{10}=\frac{5}{25}$

41. Alternendo of $\frac{4}{3}=\frac{28}{21}$

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

42. Componendo of $\frac{6}{7}=\frac{18}{21}$

(i) $\frac{6}{18}=\frac{7}{21}$ (ii) $\frac{1}{7}=\frac{3}{21}$ (iii) $\frac{7}{6}=\frac{21}{18}$ (iv) $\frac{13}{7}=\frac{39}{21}$ (v) $\frac{13}{1}=\frac{39}{3}$

43. Dividendo of $\frac{8}{7}=\frac{32}{28}$

(i) $\frac{8}{32}=\frac{7}{28}$ (ii) $\frac{1}{7}=\frac{4}{28}$ (iii) $\frac{15}{1}=\frac{60}{4}$ (iv) $\frac{7}{8}=\frac{28}{32}$ (v) $\frac{15}{7}=\frac{60}{28}$

44. Componendo and Dividendo of $\frac{5}{9}=\frac{35}{63}$

(i) $\frac{14}{4}=\frac{98}{28}$ (ii) $\frac{14}{9}=\frac{98}{63}$ (iii) $\frac{9}{5}=\frac{63}{35}$ (iv) $\frac{4}{9}=\frac{28}{63}$ (v) $\frac{5}{35}=\frac{9}{63}$

45. Invertendo of 9:6::72:48

(i) 6:9::48:72 (ii) 9:72::6:48 (iii) 3:6::24:48 (iv) 15:6::120:48 (v) 15:3::120:24

46. Alternendo of 3:4::24:32

(i) 3:24::4:32 (ii) 7:1::56:8 (iii) 7:4::56:32 (iv) 1:4::8:32 (v) 4:3::32:24

47. Componendo of 5:3::35:21

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

48. Dividendo of 2:3::8:12

(i) 5:3::20:12 (ii) 3:2::12:8 (iii) 1:3::4:12 (iv) 2:8::3:12 (v) 5:1::20:4

49. Componendo and Dividendo of 8:6::16:12

(i) 8:16::6:12 (ii) 14:2::28:4 (iii) 6:8::12:16 (iv) 2:6::4:12 (v) 14:6::28:12

Assignment Key

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