EduSahara™ Assignment

Name : Proportion Concepts

Chapter : Proportion

Grade : ICSE Grade X

1. Find the product of extremes of $17:1$ and $12:20$

   (i) 340 (ii) 339 (iii) 343 (iv) 338 (v) 12

2. Find the product of extremes of $\frac{19}{5}:\frac{19}{2}$ and $\frac{4}{9}:\frac{11}{17}$

   (i) $\frac{209}{85}$ (ii) $\frac{38}{9}$ (iii) $\frac{207}{85}$ (iv) $\frac{209}{83}$ (v) $\frac{211}{85}$

3. Find the product of means of $10:12$ and $10:8$

   (i) 122 (ii) 119 (iii) 80 (iv) 120 (v) 117

4. Find the product of means of $\frac{2}{15}:\frac{7}{3}$ and $\frac{2}{3}:\frac{7}{18}$

   (i) $\frac{16}{9}$ (ii) 2 (iii) $\frac{4}{3}$ (iv) $\frac{7}{135}$ (v) $\frac{14}{9}$

5. Find the mean proportional of 27 and 3

   (i) 7 (ii) 9 (iii) 81 (iv) 3 (v) 27

6. Find the third proportional of 27 and 9

   (i) 3 (ii) 27 (iii) 9 (iv) 0 (v) 81

7. Find the fourth proportional of $32, 8$ and 24

   (i) 6 (ii) 9 (iii) 8 (iv) 4 (v) 24

8. Which of the ratios is proportional to 24 : 4?

   (i) $29:5$ (ii) $30:5$ (iii) $30:7$ (iv) $31:5$ (v) $30:3$

9. Invertendo of $\frac{18}{9}=\frac{216}{108}$

   (i) $\frac{9}{9}=\frac{108}{108}$ (ii) $\frac{27}{9}=\frac{324}{108}$ (iii) $\frac{18}{216}=\frac{9}{108}$ (iv) $\frac{9}{18}=\frac{108}{216}$

10. Alternendo of $\frac{4}{19}=\frac{40}{190}$

    (i) $\frac{15}{19}=\frac{150}{190}$ (ii) $\frac{23}{15}=\frac{230}{150}$ (iii) $\frac{4}{40}=\frac{19}{190}$ (iv) $\frac{23}{19}=\frac{230}{190}$ (v) $\frac{19}{4}=\frac{190}{40}$

11. Componendo of $\frac{5}{13}=\frac{40}{104}$

    (i) $\frac{13}{5}=\frac{104}{40}$ (ii) $\frac{8}{13}=\frac{64}{104}$ (iii) $\frac{5}{40}=\frac{13}{104}$ (iv) $\frac{18}{13}=\frac{144}{104}$ (v) $\frac{18}{8}=\frac{144}{64}$

12. Dividendo of $\frac{9}{19}=\frac{99}{209}$

(i) $\frac{28}{10}=\frac{308}{110}$ (ii) $\frac{9}{99}=\frac{19}{209}$ (iii) $\frac{28}{19}=\frac{308}{209}$ (iv) $\frac{19}{9}=\frac{209}{99}$ (v) $\frac{10}{19}=\frac{110}{209}$

13. Componendo and dividendo of $\frac{14}{3}=\frac{42}{9}$

(i) $\frac{11}{3}=\frac{33}{9}$ (ii) $\frac{14}{42}=\frac{3}{9}$ (iii) $\frac{17}{11}=\frac{51}{33}$ (iv) $\frac{17}{3}=\frac{51}{9}$ (v) $\frac{3}{14}=\frac{9}{42}$

14. Invertendo of $\frac{i}{m}=\frac{u}{p}$

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

15. Alternendo of $\frac{l}{t}=\frac{p}{a}$

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

16. Componendo of $\frac{e}{v}=\frac{h}{s}$

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

17. Dividendo of $\frac{e}{n}=\frac{y}{u}$

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

18. Componendo and Dividendo of $\frac{e}{h}=\frac{f}{j}$

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

19. Invertendo of $c:j::r:m$

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

20. Alternendo of $n:e::r:z$

(i) $n-e:e::r-z:z$ (ii) $e:n::z:r$ (iii) $n+e:e::r+z:z$ (iv) $n:r::e:z$ (v) $n+e:n-e::r+z:r-z$

21. Componendo of $j:b::g:n$

(i) $b:j::n:g$ (ii) $j:g::b:n$ (iii) $j+b:b::g+n:n$ (iv) $j-b:b::g-n:n$ (v) $j+b:j-b::g+n:g-n$

22. Dividendo of $q:h::y:w$

(i) $q:y::h:w$ (ii) $h:q::w:y$ (iii) $q-h:h::y-w:w$ (iv) $q+h:h::y+w:w$ (v) $q+h:q-h::y+w:y-w$

23. Componendo and Dividendo of $y:a::p:v$

(i) $y+a:y-a::p+v:p-v$ (ii) $y:p::a:v$ (iii) $y-a:a::p-v:v$ (iv) $y+a:a::p+v:v$ (v) $a:y::v:p$

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

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

25. The ratio 2 : 3 is proportional to which of the following ratios?

(i) $12:18$ (ii) $10:9$ (iii) $4:12$ (iv) $6:15$ (v) $8:6$

26. Which of the following represents a proportion ?

(i) $31:25::62:75$ (ii) $30:24::90:72$ (iii) $29:23::87:92$ (iv) $32:26::96:52$ (v) $28:22::112:66$

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

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

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

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

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

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

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

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

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

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

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

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

33. If $20:25::x:20$, find 'x'

(i) 14 (ii) 19 (iii) 17 (iv) 15 (v) 16

34. Find the fourth proportional of 20, 12, 25

(i) 14 (ii) 16 (iii) 12 (iv) 18 (v) 15

35. Find the third proportional of 27 and 9

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

36. Find the mean proportional of 4 and 64

(i) 18 (ii) 17 (iii) 13 (iv) 15 (v) 16

37. If $9, x, 144$ are in continued proportion, find x

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

38. Find the mean proportional between 2.9 and 104.4

(i) 15.4 (ii) 16.4 (iii) 18.4 (iv) 19.4 (v) 17.4

39. Find the mean proportional between $\sqrt{5}$ and $5\sqrt{5}$

(i) 7 (ii) 5 (iii) 3 (iv) 4 (v) 6

40. Invertendo of $\frac{4}{5}=\frac{8}{10}$

(i) $\frac{9}{5}=\frac{18}{10}$ (ii) $\frac{4}{8}=\frac{5}{10}$ (iii) $\frac{1}{5}=\frac{2}{10}$ (iv) $\frac{5}{4}=\frac{10}{8}$ (v) $\frac{9}{1}=\frac{18}{2}$

41. Alternendo of $\frac{5}{7}=\frac{15}{21}$

(i) $\frac{2}{7}=\frac{6}{21}$ (ii) $\frac{12}{7}=\frac{36}{21}$ (iii) $\frac{7}{5}=\frac{21}{15}$ (iv) $\frac{12}{2}=\frac{36}{6}$ (v) $\frac{5}{15}=\frac{7}{21}$

42. Componendo of $\frac{3}{8}=\frac{12}{32}$

(i) $\frac{5}{8}=\frac{20}{32}$ (ii) $\frac{11}{8}=\frac{44}{32}$ (iii) $\frac{3}{12}=\frac{8}{32}$ (iv) $\frac{8}{3}=\frac{32}{12}$ (v) $\frac{11}{5}=\frac{44}{20}$

43. Dividendo of $\frac{5}{2}=\frac{20}{8}$

(i) $\frac{3}{2}=\frac{12}{8}$ (ii) $\frac{7}{3}=\frac{28}{12}$ (iii) $\frac{7}{2}=\frac{28}{8}$ (iv) $\frac{5}{20}=\frac{2}{8}$ (v) $\frac{2}{5}=\frac{8}{20}$

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

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

45. Invertendo of $5:9::35:63$

(i) $9:5::63:35$ (ii) $14:9::98:63$ (iii) $14:4::98:28$ (iv) $5:35::9:63$ (v) $4:9::28:63$

46. Alternendo of $4:9::16:36$

(i) $13:5::52:20$ (ii) $5:9::20:36$ (iii) $9:4::36:16$ (iv) $13:9::52:36$ (v) $4:16::9:36$

47. Componendo of $7:6::42:36$

(i) $7:42::6:36$ (ii) $13:6::78:36$ (iii) $13:1::78:6$ (iv) $6:7::36:42$ (v) $1:6::6:36$

48. Dividendo of $3:4::21:28$

(i) $4:3::28:21$ (ii) $7:4::49:28$ (iii) $1:4::7:28$ (iv) $7:1::49:7$ (v) $3:21::4:28$

49. Componendo and Dividendo of $5:7::30:42$

(i) $2:7::12:42$ (ii) $12:7::72:42$ (iii) $7:5::42:30$ (iv) $5:30::7:42$ (v) $12:2::72:12$

Assignment Key

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