

ARTICLE 108.—CASE VI.

*Reduce the following to Least Common Denominators :*

- |     |  |     |   |
|-----|--|-----|---|
| 1.  | $\frac{2}{8}, \frac{5}{8}, \frac{7}{12}$                                     | 12. | $\frac{4}{15}, \frac{16}{25}, \frac{17}{30}, \frac{23}{50}, \frac{37}{75}$  |
| 2.  | $\frac{8}{9}, \frac{11}{12}, \frac{17}{18}$                                  | 13. | $\frac{7}{15}, \frac{7}{18}, \frac{7}{20}, \frac{7}{36}, \frac{7}{45}$      |
| 3.  | $\frac{2}{5}, \frac{8}{8}, \frac{9}{10}$                                     | 14. | $\frac{8}{10}, \frac{5}{14}, \frac{4}{15}, \frac{8}{21}, \frac{13}{35}$     |
| 4.  | $\frac{7}{10}, \frac{7}{12}, \frac{7}{15}, \frac{7}{20}$                     | 15. | $\frac{5}{8}, \frac{8}{10}, \frac{4}{11}, \frac{8}{15}, \frac{27}{55}$      |
| 5.  | $\frac{5}{12}, \frac{7}{18}, \frac{11}{24}, \frac{17}{36}$                   | 16. | $\frac{5}{14}, \frac{9}{26}, \frac{13}{28}, \frac{25}{52}, \frac{44}{91}$   |
| 6.  | $\frac{4}{7}, \frac{7}{12}, \frac{9}{14}, \frac{16}{21}$                     | 17. | $\frac{7}{26}, \frac{11}{30}, \frac{14}{39}, \frac{19}{65}, \frac{49}{78}$  |
| 7.  | $\frac{8}{15}, \frac{13}{24}, \frac{17}{30}, \frac{23}{40}$                  | 18. | $\frac{13}{18}, \frac{16}{25}, \frac{19}{30}, \frac{28}{45}, \frac{64}{75}$ |
| 8.  | $\frac{4}{7}, \frac{8}{15}, \frac{11}{21}, \frac{18}{35}$                    | 19. | $\frac{11}{14}, \frac{13}{21}, \frac{15}{22}, \frac{23}{42}, \frac{41}{77}$ |
| 9.  | $\frac{5}{14}, \frac{7}{18}, \frac{8}{21}, \frac{17}{42}$                    | 20. | $\frac{7}{15}, \frac{8}{21}, \frac{9}{35}, \frac{11}{45}, \frac{17}{63}$    |
| 10. | $\frac{11}{16}, \frac{13}{24}, \frac{19}{36}, \frac{25}{48}$                 | 21. | $\frac{5}{8}, \frac{8}{10}, \frac{2}{15}, \frac{7}{34}, \frac{12}{85}$      |
| 11. | $\frac{1}{2}, \frac{3}{4}, \frac{4}{6}, \frac{6}{7}$                         | 22. | $\frac{11}{18}, \frac{7}{20}, \frac{13}{27}, \frac{17}{30}, \frac{19}{45}$  |
| 23. | $\frac{3}{14}, \frac{4}{15}, \frac{5}{18}, \frac{10}{21}, \frac{12}{35}$     | 32. | $\frac{17}{58}, \frac{47}{119}, \frac{79}{138}$                             |
| 24. | $\frac{8}{21}, \frac{11}{28}, \frac{16}{39}, \frac{19}{42}, \frac{37}{91}$   | 33. | $\frac{19}{88}, \frac{57}{92}, \frac{101}{207}$                             |
| 25. | $\frac{5}{12}, \frac{7}{18}, \frac{13}{57}, \frac{29}{78}, \frac{53}{114}$   | 34. | $\frac{12}{35}, \frac{24}{145}, \frac{86}{208}$                             |
| 26. | $\frac{13}{21}, \frac{19}{34}, \frac{23}{42}, \frac{28}{51}, \frac{66}{119}$ | 35. | $\frac{49}{99}, \frac{58}{117}, \frac{71}{148}$                             |
| 27. | $\frac{7}{12}, \frac{8}{15}, \frac{11}{20}, \frac{20}{39}, \frac{33}{65}$    | 36. | $\frac{13}{42}, \frac{16}{98}, \frac{48}{217}$                              |
| 28. | $\frac{13}{15}, \frac{16}{21}, \frac{19}{24}, \frac{27}{40}, \frac{41}{56}$  | 37. | $\frac{25}{68}, \frac{75}{259}, \frac{125}{388}$                            |
| 29. | $\frac{5}{6}, \frac{7}{22}, \frac{9}{28}, \frac{14}{39}, \frac{75}{148}$     | 38. | $\frac{127}{219}, \frac{157}{292}, \frac{187}{365}$                         |
| 30. | $\frac{1}{6}, \frac{9}{14}, \frac{13}{21}, \frac{41}{39}, \frac{87}{161}$    | 39. | $\frac{99}{801}, \frac{178}{518}$   |
| 31. | $\frac{25}{68}, \frac{48}{91}, \frac{64}{117}$                               | 40. | $\frac{253}{877}, \frac{331}{498}$  |

NOTE.—Find the G. C. D. of the denominators of the last three problems. Then the product of the G. C. D., and the quotients will be the L. C. M.

**Greatest Common Divisor of Fractions. (See Note.)**

*Find the G. C. D. of*

1.  $\frac{5}{12}, \frac{15}{18}, \frac{25}{48}$
2.  $\frac{4}{8}, \frac{8}{9}, \frac{8}{15}, \frac{16}{27}, \frac{28}{45}$
3.  $1\frac{8}{9}, 2\frac{4}{9}, 4\frac{7}{12}, 6\frac{13}{18}, 7\frac{19}{24}$
4.  $5\frac{1}{8}, 6\frac{2}{5}, 7\frac{1}{9}, 8\frac{8}{15}, 9\frac{1}{15}$
5.  $\frac{7}{10}, \frac{11}{12}, \frac{8}{15}, \frac{17}{20}, \frac{19}{30}$
6.  $3\frac{3}{4}, 5\frac{5}{8}, 6\frac{9}{16}, 7\frac{1}{82}, 8\frac{13}{84}$
7.  $12\frac{1}{2}, 16\frac{2}{8}, 18\frac{3}{4}, 11\frac{1}{9}, 10\frac{5}{12}, 9\frac{13}{18}$
8.  $2\frac{24}{25}, 23\frac{13}{80}, 5\frac{9}{50}, 5\frac{32}{75}, 4\frac{29}{150}$
9.  $14\frac{4}{9}, 19\frac{14}{15}, 13\frac{13}{27}, 17\frac{2}{45}, 5\frac{1}{185}$
10.  $18\frac{3}{4}, 15\frac{5}{8}, 14\frac{7}{12}, 17\frac{8}{16}, 19\frac{19}{24}$
11.  $1\frac{3}{14}, 1\frac{23}{28}, 2\frac{1}{42}, 3\frac{19}{56}, 4\frac{55}{84}$
12.  $9\frac{13}{18}, 36\frac{1}{24}, 34\frac{1}{88}, 40\frac{5}{48}, 31\frac{43}{72}$

**NOTE.**—Reduce mixed numbers to improper fractions. Find the G. C. D. of the numerators for the numerator of the required fraction, and the L. C. M. of the denominators for its denominator.

**Least Common Multiple of Fractions.** (See Note.)

*Find the L. C. M. of*

1.  $\frac{2}{3}, \frac{3}{5}, \frac{4}{9}, \frac{6}{11}$
2.  $\frac{2}{9}, \frac{5}{12}, \frac{4}{15}, \frac{8}{21}, \frac{10}{27}$
3.  $3\frac{1}{3}, 1\frac{7}{8}, 2\frac{6}{7}, 2\frac{4}{13}, 31\frac{9}{7}$
4.  $2\frac{3}{5}, 3\frac{9}{10}, 5\frac{17}{20}, 4\frac{4}{25}$
5.  $\frac{8}{15}, \frac{16}{45}, \frac{64}{75}, 1\frac{23}{105}, 1\frac{21}{185}$
6.  $2\frac{2}{8}, 2\frac{1}{4}, 2\frac{2}{5}, 2\frac{4}{7}, 2\frac{2}{11}, 2\frac{10}{13}$
7.  $2\frac{1}{4}, 3\frac{3}{8}, 5\frac{1}{16}, 4\frac{23}{8}, 12\frac{21}{2}$
8.  $12\frac{1}{2}, 16\frac{2}{3}, 18\frac{3}{4}, 14\frac{2}{7}, 13\frac{7}{11}, 23\frac{1}{13}$
9.  $\frac{7}{18}, \frac{35}{36}, \frac{49}{54}, 2\frac{31}{72}, 2\frac{29}{108}$
10.  $3\frac{1}{9}, 4\frac{5}{18}, 5\frac{8}{27}, 6\frac{38}{45}, 7\frac{5}{81}$
11.  $2\frac{1}{14}, 2\frac{16}{21}, 3\frac{8}{28}, 3\frac{11}{35}, 3\frac{19}{42}, 3\frac{27}{49}$
12.  $2\frac{1}{13}, 3\frac{3}{26}, 4\frac{35}{52}, 5\frac{53}{86}, 7\frac{11}{91}$

NOTE.—Reduce mixed numbers to improper fractions. Find the L. C. M. of the numerators for the numerator of the required fraction, and the G. C. D. of the denominators for its denominator.

# ANSWERS.

## ARTICLE 108.

1.	$\frac{16}{24}, \frac{15}{24}, \frac{14}{24}$	21.	$\frac{425}{510}, \frac{153}{510}, \frac{68}{510}, \frac{105}{510}, \frac{72}{510}$
2.	$\frac{32}{88}, \frac{33}{88}, \frac{34}{88}$	22.	$\frac{330}{540}, \frac{189}{540}, \frac{260}{540}, \frac{306}{540}, \frac{228}{540}$
3.	$\frac{16}{40}, \frac{15}{40}, \frac{38}{40}$	23.	$\frac{135}{680}, \frac{168}{680}, \frac{175}{680}, \frac{300}{680}, \frac{216}{680}$
4.	$\frac{42}{80}, \frac{35}{80}, \frac{28}{80}, \frac{21}{80}$	24.	$\frac{208}{546}, \frac{231}{546}, \frac{224}{546}, \frac{247}{546}, \frac{222}{546}$
5.	$\frac{30}{72}, \frac{28}{72}, \frac{33}{72}, \frac{34}{72}$	25.	$\frac{285}{684}, \frac{266}{684}, \frac{156}{684}, \frac{261}{684}, \frac{318}{684}$
6.	$\frac{48}{84}, \frac{49}{84}, \frac{54}{84}, \frac{64}{84}$	26.	$\frac{442}{714}, \frac{399}{714}, \frac{391}{714}, \frac{392}{714}, \frac{396}{714}$
7.	$\frac{64}{120}, \frac{65}{120}, \frac{68}{120}, \frac{69}{120}$	27.	$\frac{455}{780}, \frac{416}{780}, \frac{429}{780}, \frac{400}{780}, \frac{396}{780}$
8.	$\frac{60}{105}, \frac{56}{105}, \frac{55}{105}, \frac{54}{105}$	28.	$\frac{728}{840}, \frac{640}{840}, \frac{665}{840}, \frac{567}{840}, \frac{615}{840}$
9.	$\frac{45}{126}, \frac{49}{126}, \frac{48}{126}, \frac{51}{126}$	29.	$\frac{715}{858}, \frac{273}{858}, \frac{297}{858}, \frac{308}{858}, \frac{450}{858}$
10.	$\frac{99}{144}, \frac{78}{144}, \frac{76}{144}, \frac{75}{144}$	30.	$\frac{161}{966}, \frac{621}{966}, \frac{598}{966}, \frac{574}{966}, \frac{522}{966}$
11.	$\frac{70}{140}, \frac{105}{140}, \frac{112}{140}, \frac{120}{140}$	31.	$\frac{325}{819}, \frac{432}{819}, \frac{448}{819}$
12.	$\frac{40}{150}, \frac{96}{150}, \frac{85}{150}, \frac{69}{150}, \frac{74}{150}$	32.	$\frac{289}{952}, \frac{376}{952}, \frac{558}{952}$
13.	$\frac{84}{180}, \frac{70}{180}, \frac{68}{180}, \frac{35}{180}, \frac{28}{180}$	33.	$\frac{437}{828}, \frac{513}{828}, \frac{404}{828}$
14.	$\frac{68}{210}, \frac{75}{210}, \frac{56}{210}, \frac{80}{210}, \frac{78}{210}$	34.	$\frac{348}{1015}, \frac{168}{1015}, \frac{180}{1015}$
15.	$\frac{275}{380}, \frac{99}{380}, \frac{120}{380}, \frac{176}{380}, \frac{162}{380}$	35.	$\frac{637}{1287}, \frac{688}{1287}, \frac{639}{1287}$
16.	$\frac{130}{364}, \frac{126}{364}, \frac{169}{364}, \frac{175}{364}, \frac{176}{364}$	36.	$\frac{403}{1302}, \frac{224}{1302}, \frac{288}{1302}$
17.	$\frac{105}{390}, \frac{143}{390}, \frac{140}{390}, \frac{114}{390}, \frac{245}{390}$	37.	$\frac{925}{2331}, \frac{675}{2331}, \frac{875}{2331}$
18.	$\frac{325}{450}, \frac{288}{450}, \frac{285}{450}, \frac{280}{450}, \frac{384}{450}$	38.	$\frac{2540}{4380}, \frac{2355}{4380}, \frac{2244}{4380}$
19.	$\frac{363}{462}, \frac{286}{462}, \frac{315}{462}, \frac{253}{462}, \frac{246}{462}$	39.	$\frac{1188}{3612}, \frac{1211}{3612}$
20.	$\frac{147}{315}, \frac{120}{315}, \frac{81}{315}, \frac{77}{315}, \frac{85}{315}$	40.	$\frac{4301}{6409}, \frac{4303}{6409}$

### Greatest Common Divisor of Fractions.

1.	$\frac{5}{48}$	5.	$\frac{1}{60}$	9.	$\frac{13}{135}$
2.	$\frac{4}{135}$	6.	$\frac{15}{84}$	10.	$\frac{25}{48}$
3.	$\frac{11}{72}$	7.	$\frac{25}{36}$	11.	$\frac{17}{168}$
4.	$\frac{16}{45}$	8.	$\frac{37}{150}$	12.	$\frac{31}{144}$

**Least Common Multiple of Fractions.**

1. 12.

2.  $13\frac{1}{8}$

3. 60.

4.  $187\frac{1}{8}$

5.  $17\frac{1}{15}$

6. 72.

7.  $101\frac{1}{4}$

8. 300.

9.  $68\frac{1}{8}$

10.  $444\frac{8}{9}$

11.  $248\frac{4}{7}$

12.  $1046\frac{0}{8}$