

[17-11-20-76]

### Addition of Fractions

|         | a               | b               | c               | d                | e                | f                |
|---------|-----------------|-----------------|-----------------|------------------|------------------|------------------|
| I. 1.   | $\frac{3}{7}$   | $\frac{4}{9}$   | $\frac{3}{4}$   | $2\frac{1}{3}$   | $6\frac{3}{5}$   | $\frac{5}{6}$    |
|         | $\frac{2}{7}$   | $\frac{7}{9}$   | $\frac{2}{4}$   | $4\frac{1}{3}$   | $9\frac{4}{5}$   | $4\frac{2}{6}$   |
| 2.      | $\frac{7}{10}$  | $\frac{6}{8}$   | $\frac{5}{9}$   | $2\frac{3}{4}$   | $4\frac{6}{7}$   | $6\frac{7}{8}$   |
|         | $\frac{4}{10}$  | $\frac{7}{8}$   | $\frac{8}{9}$   | $6\frac{2}{4}$   | $3\frac{5}{7}$   | $\frac{4}{8}$    |
| II. 1.  | $\frac{3}{8}$   | $\frac{7}{12}$  | $\frac{9}{16}$  | $2\frac{3}{4}$   | $\frac{5}{8}$    | $12\frac{7}{10}$ |
|         | $\frac{1}{8}$   | $\frac{11}{12}$ | $\frac{13}{16}$ | $6\frac{1}{4}$   | $9\frac{7}{8}$   | $7\frac{3}{10}$  |
| 2.      | $\frac{5}{6}$   | $\frac{7}{16}$  | $\frac{7}{12}$  | $8\frac{3}{8}$   | $2\frac{11}{16}$ | $\frac{7}{9}$    |
|         | $\frac{5}{6}$   | $\frac{15}{16}$ | $\frac{1}{12}$  | $5\frac{7}{8}$   | $7\frac{9}{16}$  | $4\frac{5}{9}$   |
| III. 1. | $\frac{1}{2}$   | $\frac{5}{6}$   | $\frac{11}{12}$ | $9\frac{5}{8}$   | $7\frac{2}{3}$   | $7\frac{3}{4}$   |
|         | $\frac{3}{8}$   | $\frac{1}{3}$   | $\frac{1}{6}$   | $6\frac{3}{4}$   | $8\frac{1}{6}$   | $\frac{1}{8}$    |
| 2.      | $\frac{5}{9}$   | $\frac{9}{10}$  | $\frac{9}{16}$  | $8\frac{1}{3}$   | $6\frac{3}{4}$   | $\frac{15}{16}$  |
|         | $\frac{2}{3}$   | $\frac{1}{5}$   | $\frac{3}{4}$   | $5\frac{1}{12}$  | $7\frac{3}{8}$   | $5\frac{3}{4}$   |
| IV. 1.  | $\frac{1}{2}$   | $\frac{7}{12}$  | $\frac{5}{6}$   | $7\frac{7}{10}$  | $9\frac{3}{4}$   | $6\frac{5}{6}$   |
|         | $\frac{5}{6}$   | $\frac{2}{3}$   | $\frac{2}{3}$   | $6\frac{1}{2}$   | $\frac{7}{12}$   | $9\frac{5}{12}$  |
| 2.      | $\frac{3}{4}$   | $\frac{5}{6}$   | $\frac{3}{5}$   | $6\frac{2}{3}$   | $5\frac{1}{4}$   | $11\frac{2}{3}$  |
|         | $\frac{11}{12}$ | $\frac{11}{12}$ | $\frac{9}{10}$  | $8\frac{1}{12}$  | $\frac{9}{20}$   | $7\frac{5}{6}$   |
| V. 1.   | $\frac{1}{2}$   | $\frac{3}{4}$   | $\frac{1}{8}$   | $5\frac{7}{8}$   | $9\frac{1}{4}$   | $7\frac{3}{4}$   |
|         | $\frac{2}{5}$   | $\frac{2}{3}$   | $\frac{2}{3}$   | $6\frac{1}{3}$   | $4\frac{2}{3}$   | $\frac{5}{6}$    |
| 2.      | $\frac{3}{8}$   | $\frac{5}{6}$   | $\frac{7}{10}$  | $8\frac{1}{6}$   | $1\frac{3}{4}$   | $16\frac{1}{2}$  |
|         | $\frac{1}{6}$   | $\frac{4}{9}$   | $\frac{3}{4}$   | $5\frac{3}{4}$   | $\frac{2}{3}$    | $9\frac{4}{5}$   |
| VI. 1.  | $\frac{3}{4}$   | $\frac{5}{6}$   | $\frac{9}{16}$  | $6\frac{2}{3}$   | $8\frac{5}{6}$   | $7\frac{5}{8}$   |
|         | $\frac{1}{2}$   | $\frac{7}{8}$   | $\frac{3}{4}$   | $4\frac{1}{2}$   | $3\frac{1}{2}$   | $\frac{9}{16}$   |
| 2.      | $\frac{7}{8}$   | $\frac{2}{3}$   | $\frac{1}{8}$   | $9\frac{11}{12}$ | $9\frac{3}{4}$   | $8\frac{3}{4}$   |
|         | $\frac{1}{2}$   | $\frac{11}{12}$ | $\frac{7}{9}$   | $7\frac{5}{8}$   | $6\frac{3}{8}$   | $9\frac{7}{16}$  |
| 2.      | $\frac{2}{3}$   | $\frac{3}{8}$   | $\frac{2}{3}$   | $9\frac{3}{4}$   | $7\frac{3}{4}$   | $4\frac{3}{8}$   |
|         | $\frac{3}{4}$   | $\frac{5}{6}$   | $\frac{1}{6}$   | $4\frac{1}{2}$   | $\frac{2}{3}$    | $7\frac{1}{2}$   |

### Answers to Addition of Fractions

I. 1. a.  $\frac{5}{7}$ , b.  $1\frac{2}{9}$ , c.  $1\frac{1}{4}$ , d.  $6\frac{2}{3}$ , e.  $16\frac{2}{5}$ , f.  $5\frac{1}{6}$ . 2. a.  $1\frac{1}{10}$ , b.  $1\frac{5}{8}$ , c.  $1\frac{4}{9}$ , d.  $9\frac{1}{4}$ , e.  $8\frac{4}{7}$ , f.  $7\frac{3}{8}$ .

II. 1. a.  $\frac{1}{2}$ , b.  $1\frac{1}{2}$ , c.  $1\frac{3}{8}$ , d. 9, e.  $10\frac{1}{2}$ , f. 20. 2. a.  $1\frac{2}{3}$ , b.  $1\frac{3}{8}$ , c.  $\frac{2}{3}$ , d.  $14\frac{1}{4}$ , e.  $10\frac{1}{4}$ , f.  $5\frac{1}{3}$ .

III. 1. a.  $\frac{7}{8}$ , b.  $1\frac{1}{6}$ , c.  $1\frac{1}{12}$ , d.  $16\frac{3}{8}$ , e.  $15\frac{5}{6}$ , f.  $7\frac{7}{8}$ . 2. a.  $1\frac{2}{9}$ , b.  $1\frac{1}{10}$ , c.  $1\frac{5}{16}$ , d.  $13\frac{5}{12}$ , e.  $14\frac{1}{8}$ , f.  $6\frac{11}{16}$ .

IV. 1. a.  $1\frac{1}{3}$ , b.  $1\frac{1}{4}$ , c.  $1\frac{1}{2}$ , d.  $14\frac{2}{5}$ , e.  $10\frac{1}{3}$ , f.  $16\frac{1}{4}$ . 2. a.  $1\frac{2}{3}$ , b.  $1\frac{3}{4}$ , c.  $1\frac{1}{2}$ , d.  $14\frac{3}{4}$ , e.  $5\frac{7}{10}$ , f.  $19\frac{1}{2}$ .

V. 1. a.  $\frac{9}{10}$ , b.  $1\frac{5}{12}$ , c.  $\frac{19}{24}$ , d.  $12\frac{5}{24}$ , e.  $13\frac{1}{12}$ , f.  $8\frac{7}{12}$ . 2. a.  $\frac{13}{24}$ , b.  $1\frac{5}{18}$ , c.  $1\frac{9}{20}$ , d.  $13\frac{1}{12}$ , e.  $2\frac{5}{12}$ , f.  $26\frac{3}{10}$ .

VI. 1. a.  $2\frac{1}{8}$ , b.  $2\frac{3}{8}$ , c.  $1\frac{7}{16}$ , d.  $21\frac{1}{12}$ , e.  $22\frac{1}{12}$ , f.  $16\frac{5}{16}$ . 2. a.  $1\frac{1}{12}$ , b.  $2\frac{1}{8}$ , c.  $1\frac{1}{18}$ , d.  $21\frac{7}{8}$ , e.  $14\frac{9}{24}$ , f.  $21\frac{5}{16}$ .

# Subtraction of Fractions

[17-11-21-76]

|         | a              | b               | c               | d               | e              | f               |
|---------|----------------|-----------------|-----------------|-----------------|----------------|-----------------|
| I. 1.   | $\frac{4}{5}$  | $\frac{5}{6}$   | $\frac{7}{8}$   | $12\frac{2}{3}$ | $9\frac{5}{6}$ | $9\frac{7}{12}$ |
|         | $\frac{3}{5}$  | $\frac{1}{6}$   | $\frac{5}{8}$   | $4\frac{1}{3}$  | $8\frac{5}{6}$ | $6\frac{1}{12}$ |
| 2.      | $\frac{7}{9}$  | $\frac{15}{16}$ | $\frac{9}{10}$  | $6\frac{3}{4}$  | $4\frac{5}{8}$ | $16\frac{4}{5}$ |
|         | $\frac{5}{9}$  | $\frac{11}{16}$ | $\frac{7}{10}$  | $\frac{3}{4}$   | $\frac{3}{8}$  | $7\frac{3}{5}$  |
| II. 1.  | $\frac{3}{4}$  | $\frac{1}{2}$   | $\frac{9}{16}$  | $12\frac{7}{8}$ | $8\frac{2}{3}$ | $6\frac{3}{4}$  |
|         | $\frac{7}{12}$ | $\frac{3}{10}$  | $\frac{1}{4}$   | $6\frac{1}{2}$  | $4\frac{1}{6}$ | $\frac{7}{12}$  |
| 2.      | $\frac{3}{5}$  | $\frac{15}{16}$ | $\frac{11}{12}$ | $9\frac{3}{4}$  | $5\frac{3}{4}$ | $8\frac{2}{3}$  |
|         | $\frac{3}{10}$ | $\frac{7}{8}$   | $\frac{2}{3}$   | $2\frac{5}{8}$  | $\frac{5}{16}$ | $8\frac{5}{9}$  |
| III. 1. | $\frac{2}{3}$  | $\frac{1}{2}$   | $\frac{2}{3}$   | $6\frac{5}{8}$  | $9\frac{3}{4}$ | $1\frac{7}{8}$  |
|         | $\frac{1}{5}$  | $\frac{1}{3}$   | $\frac{1}{4}$   | $2\frac{1}{3}$  | $7\frac{2}{3}$ | $\frac{2}{3}$   |
| 2.      | $\frac{5}{6}$  | $\frac{5}{6}$   | $\frac{2}{3}$   | $8\frac{3}{4}$  | $4\frac{5}{6}$ | $6\frac{1}{2}$  |
|         | $\frac{3}{4}$  | $\frac{3}{8}$   | $\frac{2}{5}$   | $1\frac{1}{6}$  | $\frac{3}{8}$  | $\frac{2}{5}$   |

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|         | a               | b               | c              | d               | e               | f               |
|---------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|
| IV. 1.  | 5               | 9               | 8              | 1               | 11              | 16              |
|         | $2\frac{3}{4}$  | $1\frac{1}{6}$  | $7\frac{1}{4}$ | $\frac{7}{9}$   | $8\frac{2}{3}$  | $7\frac{4}{5}$  |
| 2.      | 1               | 3               | 13             | 8               | 14              | 17              |
|         | $\frac{4}{9}$   | $2\frac{2}{4}$  | $6\frac{5}{8}$ | $7\frac{5}{6}$  | $5\frac{3}{8}$  | $9\frac{3}{4}$  |
| V. 1.   | $7\frac{1}{4}$  | $5\frac{1}{8}$  | $6\frac{4}{9}$ | $1\frac{1}{8}$  | $9\frac{1}{3}$  | $6\frac{2}{5}$  |
|         | $3\frac{3}{4}$  | $4\frac{7}{8}$  | $5\frac{7}{9}$ | $\frac{3}{8}$   | $\frac{2}{3}$   | $\frac{3}{5}$   |
| 2.      | $1\frac{1}{12}$ | $9\frac{1}{4}$  | $7\frac{1}{6}$ | $8\frac{1}{5}$  | $10\frac{1}{9}$ | $14\frac{2}{7}$ |
|         | $\frac{7}{12}$  | $8\frac{3}{4}$  | $4\frac{5}{6}$ | $\frac{4}{5}$   | $\frac{7}{9}$   | $6\frac{5}{7}$  |
| VI. 1.  | $2\frac{1}{2}$  | $5\frac{1}{4}$  | $9\frac{1}{3}$ | $6\frac{1}{2}$  | $10\frac{2}{3}$ | $16\frac{3}{4}$ |
|         | $1\frac{3}{4}$  | $4\frac{3}{8}$  | $\frac{5}{6}$  | $\frac{7}{12}$  | $1\frac{7}{9}$  | $8\frac{7}{8}$  |
| 2.      | $8\frac{1}{3}$  | $1\frac{1}{2}$  | $7\frac{1}{3}$ | $5\frac{1}{4}$  | $10\frac{1}{5}$ | $14\frac{1}{2}$ |
|         | $1\frac{4}{6}$  | $\frac{11}{12}$ | $\frac{8}{9}$  | $\frac{11}{12}$ | $3\frac{7}{10}$ | $6\frac{9}{16}$ |
| VII. 1. | $7\frac{1}{2}$  | $5\frac{1}{4}$  | $9\frac{1}{3}$ | $11\frac{1}{2}$ | $13\frac{1}{3}$ | $10\frac{5}{8}$ |
|         | $1\frac{2}{3}$  | $4\frac{2}{3}$  | $7\frac{3}{4}$ | $6\frac{4}{5}$  | $7\frac{1}{2}$  | $\frac{2}{3}$   |
| 2.      | $4\frac{1}{5}$  | $8\frac{1}{9}$  | $3\frac{1}{4}$ | $14\frac{3}{4}$ | $1\frac{1}{2}$  | $14\frac{1}{6}$ |
|         | $\frac{1}{2}$   | $\frac{5}{6}$   | $\frac{5}{6}$  | $8\frac{5}{6}$  | $\frac{2}{3}$   | $5\frac{3}{4}$  |

### Answers to Subtraction of Fractions

- I. 1. a.  $\frac{1}{3}$ , b.  $\frac{2}{3}$ , c.  $\frac{1}{4}$ , d.  $8\frac{1}{3}$ , e. 1, f.  $3\frac{1}{2}$ . 2. a.  $\frac{2}{9}$ , b.  $\frac{1}{4}$ , c.  $\frac{1}{5}$ , d. 6, e.  $4\frac{1}{4}$ , f.  $9\frac{1}{5}$ .
- II. 1. a.  $\frac{1}{6}$ , b.  $\frac{1}{5}$ , c.  $\frac{5}{16}$ , d.  $6\frac{3}{8}$ , e.  $4\frac{1}{2}$ , f.  $6\frac{1}{6}$ . 2. a.  $\frac{3}{10}$ , b.  $\frac{1}{16}$ , c.  $\frac{1}{4}$ , d.  $7\frac{1}{8}$ , e.  $5\frac{7}{16}$ , f.  $\frac{1}{9}$ .
- III. 1. a.  $\frac{7}{15}$ , b.  $\frac{1}{6}$ , c.  $\frac{5}{12}$ , d.  $4\frac{7}{24}$ , e.  $2\frac{1}{12}$ , f.  $1\frac{5}{24}$ . 2. a.  $\frac{1}{12}$ , b.  $\frac{11}{24}$ , c.  $\frac{4}{15}$ , d.  $7\frac{7}{12}$ , e.  $4\frac{11}{24}$ , f.  $6\frac{1}{10}$ .
- IV. 1. a.  $2\frac{1}{4}$ , b.  $7\frac{5}{6}$ , c.  $\frac{3}{4}$ , d.  $\frac{2}{9}$ , e.  $2\frac{1}{3}$ , f.  $8\frac{1}{5}$ . 2. a.  $\frac{5}{9}$ , b.  $\frac{1}{2}$ , c.  $6\frac{3}{8}$ , d.  $\frac{1}{6}$ , e.  $8\frac{5}{8}$ , f.  $7\frac{1}{4}$ .
- V. 1. a.  $3\frac{1}{2}$ , b.  $\frac{1}{4}$ , c.  $\frac{2}{3}$ , d.  $\frac{3}{4}$ , e.  $8\frac{2}{3}$ , f.  $5\frac{4}{5}$ . 2. a.  $\frac{1}{2}$ , b.  $\frac{1}{2}$ , c.  $2\frac{1}{3}$ , d.  $7\frac{2}{5}$ , e.  $9\frac{1}{3}$ , f.  $7\frac{4}{7}$ .
- VI. 1. a.  $\frac{3}{4}$ , b.  $\frac{7}{8}$ , c.  $8\frac{1}{2}$ , d.  $5\frac{11}{12}$ , e.  $8\frac{8}{9}$ , f.  $7\frac{7}{8}$ . 2. a.  $6\frac{2}{3}$ , b.  $\frac{7}{12}$ , c.  $6\frac{4}{9}$ , d.  $4\frac{1}{3}$ , e.  $6\frac{1}{2}$ , f.  $7\frac{5}{16}$ .
- VII. 1. a.  $5\frac{5}{6}$ , b.  $\frac{7}{12}$ , c.  $1\frac{7}{12}$ , d.  $4\frac{7}{10}$ , e.  $5\frac{5}{6}$ , f.  $9\frac{23}{24}$ . 2. a.  $3\frac{7}{10}$ , b.  $7\frac{5}{18}$ , c.  $2\frac{5}{12}$ , d.  $5\frac{11}{12}$ , e.  $\frac{5}{6}$ , f.  $8\frac{5}{12}$ .