

SOLUTIONS MANUAL

Business Mathematics

13TH EDITION



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Write the following fractions in lowest terms.

1. $\frac{35}{80}$

1. _____

2. $\frac{375}{1000}$

2. _____

3. $\frac{32}{64}$

3. _____

Convert the following improper fractions to mixed numbers, and write using lowest terms.

4. $\frac{19}{7}$

4. _____

5. $\frac{38}{24}$

5. _____

6. $\frac{50}{16}$

6. _____

Convert the following mixed numbers to improper fractions.

7. $3\frac{5}{11}$

7. _____

8. $21\frac{7}{8}$

8. _____

9. $32\frac{1}{3}$

9. _____

Find the LCD of each of the following groups of denominators.

10. 8, 12

10. _____

11. 5, 10, 16

11. _____

12. 6, 15, 24, 32

12. _____

Solve the following problems.

13.
$$\begin{array}{r} \frac{1}{5} \\ \frac{3}{10} \\ + \frac{1}{4} \\ \hline \end{array}$$

14.
$$\begin{array}{r} 47\frac{7}{12} \\ -13\frac{1}{6} \\ \hline \end{array}$$

13. _____

14. _____

$$15. \quad \begin{array}{r} 59\frac{3}{8} \\ - 48\frac{13}{16} \\ \hline \end{array} \qquad 15. \underline{\hspace{2cm}}$$

$$16. \quad 12\frac{1}{2} \times 1\frac{2}{3} \qquad 16. \underline{\hspace{2cm}}$$

$$17. \quad 3\frac{3}{4} \div \frac{27}{16} \qquad 17. \underline{\hspace{2cm}}$$

Solve the following application problems.

18. Spence Ferris, a sales representative, drove $4\frac{1}{2}$ hours on the first day of his business trip, $8\frac{3}{4}$ hours on the second day, $6\frac{2}{3}$ hours on the third day, and $5\frac{1}{6}$ hours on the fourth day. If he must drive a total of 30 hours in five days, how many hours must Spence drive on the fifth day? 18.

19. Rod Shuffield owns $63\frac{3}{4}$ acres of land. He sells one-third of the land, $\frac{1}{5}$ of the remaining land will lie unplanted. How many acres will Rod plant this year? 19.

20. Anna Granger bought 29 shares of one stock for $\$8\frac{3}{4}$ per share and 15 shares of another stock for $\$6\frac{1}{4}$ per share. How much did she pay altogether? 20.

21. Find the number of decorative bows that can be made from $24\frac{3}{4}$ yards of ribbon if each bow requires $1\frac{1}{8}$ yards of ribbon. 21.

Convert the following decimals to fractions.

$$22. \quad .725 \qquad 22. \underline{\hspace{2cm}}$$

$$23. \quad .84 \qquad 23. \underline{\hspace{2cm}}$$

Convert the following fractions to decimals. Round answer to the nearest thousandth.

$$24. \quad \frac{17}{18} \qquad 24. \underline{\hspace{2cm}}$$

$$25. \quad \frac{19}{24} \qquad 25. \underline{\hspace{2cm}}$$

Write the following fractions in lowest terms.

1. $\frac{28}{70}$

1. _____

2. $\frac{36}{100}$

2. _____

3. $\frac{24}{1236}$

3. _____

Convert the following improper fractions to mixed numbers, and write using lowest terms.

4. $\frac{55}{7}$

4. _____

5. $\frac{21}{6}$

5. _____

6. $\frac{80}{21}$

6. _____

Convert the following mixed numbers to improper fractions.

7. $4\frac{5}{6}$

7. _____

8. $32\frac{1}{8}$

8. _____

9. $10\frac{4}{9}$

9. _____

Find the LCD of each of the following groups of denominators.

10. 6, 27

10. _____

11. 5, 12, 21

11. _____

12. 2, 6, 15, 32

12. _____

Solve the following problems.

13.
$$\begin{array}{r} \frac{5}{8} \\ \frac{7}{12} \\ + \frac{2}{3} \\ \hline \end{array}$$

14.
$$\begin{array}{r} 27\frac{8}{9} \\ -14\frac{1}{3} \\ \hline \end{array}$$

13. _____

14. _____

$$\begin{array}{r} 15. \quad 73\frac{4}{7} \\ - 29\frac{11}{14} \\ \hline \end{array}$$

15. _____

$$16. \quad 6\frac{1}{3} \times \frac{2}{5}$$

16. _____

$$17. \quad 2\frac{1}{2} \div 3\frac{3}{4}$$

17. _____

Solve the following application problems.

18. Desiree Ramirez is a scuba diver and plans to spend 5 hours underwater during her five day vacation. She makes two dives each day. On the first day, the duration of her dives was $\frac{1}{2}$ hour and $\frac{2}{3}$ hour; the second day, $\frac{3}{4}$ and $\frac{1}{3}$ hour; the third day, $\frac{5}{6}$ and $\frac{1}{2}$ hour; the fourth day, $\frac{2}{3}$ and $\frac{1}{4}$ hour. How long must she spend on the fifth day to achieve her goal?

18. _____

19. Sam Becker owns $147\frac{1}{4}$ acres of land in Maine. He sells one-fifth of his land and deeds $\frac{1}{2}$ of the remaining land to his grandchildren. How much land does Sam still own?

19. _____

20. Sally McLouth bought 7 pounds of rib eye steak for \$7.75 per pound and $4\frac{1}{2}$ pounds of lamb chops for \$9.25 per pound. Find the total cost. Round your answer to the nearest cent.

20. _____

21. A party favor requires $3\frac{7}{8}$ inches of ribbon. How many party favors can be made with 62 inches of ribbon?

21. _____

Convert the following decimals to fractions.

$$22. \quad .3$$

22. _____

$$23. \quad .85$$

23. _____

Convert the following fractions to decimals. Round answer to the nearest thousandth.

$$24. \quad \frac{19}{22}$$

24. _____

$$25. \quad \frac{11}{12}$$

25. _____

Write the following fractions in lowest terms.

1. $\frac{76}{90}$

1. _____

2. $\frac{28}{490}$

2. _____

3. $\frac{426}{840}$

3. _____

Convert the following improper fractions to mixed numbers, and write using lowest terms.

4. $\frac{39}{5}$

4. _____

5. $\frac{63}{14}$

5. _____

6. $\frac{116}{28}$

6. _____

Convert the following mixed numbers to improper fractions.

7. $6\frac{5}{8}$

7. _____

8. $17\frac{3}{5}$

8. _____

9. $12\frac{1}{11}$

9. _____

Find the LCD of each of the following groups of denominators.

10. 6, 21

10. _____

11. 4, 10, 18

11. _____

12. 8, 14, 16, 21

12. _____

Solve the following problems.

13.
$$\begin{array}{r} \frac{3}{4} \\ \frac{2}{3} \\ + \frac{5}{6} \\ \hline \end{array}$$

14.
$$\begin{array}{r} 16\frac{15}{16} \\ -4\frac{1}{8} \\ \hline \end{array}$$

13. _____

14. _____

Write the following fractions in lowest terms.

1. $\frac{56}{60}$

1. _____

2. $\frac{48}{100}$

2. _____

3. $\frac{281}{562}$

3. _____

Convert the following improper fractions to mixed numbers, and write using lowest terms.

4. $\frac{35}{8}$

4. _____

5. $\frac{70}{30}$

5. _____

6. $\frac{124}{24}$

6. _____

Convert the following mixed numbers to improper fractions.

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

7. _____

8. $12\frac{3}{16}$

8. _____

9. $34\frac{2}{3}$

9. _____

Find the LCD of each of the following groups of denominators.

10. 14, 20

10. _____

11. 10, 15, 20

11. _____

12. 8, 9, 15, 16

12. _____

Solve the following problems.

13.
$$\begin{array}{r} 18\frac{3}{5} \\ 4\frac{7}{10} \\ + 1\frac{8}{15} \\ \hline \end{array}$$

14.
$$\begin{array}{r} 6\frac{7}{12} \\ - 2\frac{1}{3} \\ \hline \end{array}$$

13. _____

14. _____

$$15. \begin{array}{r} 92\frac{1}{4} \\ -11\frac{5}{6} \\ \hline \end{array}$$

15. _____

$$16. 5\frac{1}{9} \times \frac{4}{23}$$

16. _____

$$17. 3\frac{2}{5} \div 4\frac{8}{15}$$

17. _____

Solve the following application problems.

18. Mari Seni works exactly 40 hours in a 5-day work week. She worked $6\frac{1}{2}$ hours of Monday, $8\frac{3}{4}$ hours on Tuesday, $6\frac{5}{6}$ hours on Wednesday, and $10\frac{1}{4}$ hours on Thursday. How many hours must Mari work on Friday?

18. _____

19. Barry Owen owns $146\frac{1}{2}$ acres of land in Nebraska. He sells one-third of the land and donates $\frac{1}{10}$ of the remainder for charity. How many acres of land does he have left?

19. _____

20. Kirk Spencer bought 23 shares of one stock for $\$6\frac{5}{8}$ per share and 45 shares of another stock for $\$16\frac{3}{4}$ per share. How much did he pay altogether? Round your answer to the nearest cent.

20. _____

21. Brookhaven College recently carpeted its new offices with 210 square yards of carpet. The total cost of the carpet was \$6825. What was the cost of the carpet per square yard?

21. _____

Convert the following decimals to fractions.

$$22. .075$$

22. _____

$$23. .42$$

23. _____

Convert the following fractions to decimals. Round to the nearest thousandth.

$$24. \frac{3}{28}$$

24. _____

$$25. \frac{41}{84}$$

25. _____

For each question, select the letter that corresponds to the correct answer.

1. Write $\frac{80}{112}$ in lowest terms. 1. _____
(a) $\frac{6}{7}$ (b) $\frac{40}{56}$ (c) $\frac{5}{7}$ (d) $\frac{10}{14}$
2. Write $\frac{325}{1000}$ in lowest terms. 2. _____
(a) $\frac{28}{250}$ (b) $\frac{13}{40}$ (c) $\frac{65}{200}$ (d) $\frac{11}{100}$
3. Write $\frac{36}{1260}$ in lowest terms. 3. _____
(a) $\frac{1}{35}$ (b) $\frac{18}{630}$ (c) $\frac{3}{105}$ (d) $\frac{6}{210}$
4. Convert $\frac{39}{5}$ to a mixed number. Write in lowest terms. 4. _____
(a) $5\frac{4}{7}$ (b) $4\frac{5}{7}$ (c) $7\frac{4}{5}$ (d) $7\frac{5}{4}$
5. Convert $\frac{116}{28}$ to a mixed number. Write in lowest terms. 5. _____
(a) $4\frac{4}{28}$ (b) $7\frac{1}{4}$ (c) $1\frac{4}{7}$ (d) $4\frac{1}{7}$
6. Convert $\frac{57}{18}$ to a mixed number. Write in lowest terms. 6. _____
(a) $3\frac{1}{3}$ (b) $3\frac{3}{18}$ (c) $3\frac{1}{6}$ (d) 3
7. Convert $7\frac{5}{9}$ to an improper fraction. 7. _____
(a) $\frac{68}{9}$ (b) $\frac{60}{9}$ (c) $\frac{63}{9}$ (d) $\frac{71}{9}$
8. Convert $14\frac{5}{6}$ to an improper fraction. 8. _____
(a) $\frac{89}{6}$ (b) $\frac{84}{5}$ (c) $\frac{70}{6}$ (d) $\frac{76}{5}$

9. Convert $20\frac{3}{4}$ to an improper fraction. 9. _____

- (a) $\frac{64}{4}$ (b) $\frac{83}{3}$ (c) $\frac{80}{3}$ (d) $\frac{83}{4}$

10. Find the LCD for $\frac{3}{4}$ and $\frac{17}{50}$. 10. _____

- (a) 120 (b) 2 (c) 100 (d) 200

11. Find the LCD for $\frac{3}{10}$, $\frac{7}{18}$, and $\frac{21}{25}$. 11. _____

- (a) 500 (b) 630 (c) 900 (d) 450

12. Find the LCD for $\frac{3}{4}$, $\frac{1}{8}$, and $\frac{16}{21}$. 12. _____

- (a) 336 (b) 168 (c) 2016 (d) 4032

Solve the following problems.

13. Add: $\frac{3}{4} + \frac{5}{8} + \frac{1}{12}$ 13. _____

- (a) $2\frac{1}{2}$ (b) $1\frac{11}{24}$ (c) $1\frac{9}{20}$ (d) $1\frac{7}{12}$

14. Subtract: $6\frac{8}{9} - 2\frac{1}{3}$ 14. _____

- (a) $4\frac{5}{9}$ (b) $4\frac{4}{9}$ (c) $4\frac{2}{3}$ (d) $4\frac{1}{2}$

15. Subtract: $57\frac{1}{12} - 28\frac{1}{6}$ 15. _____

- (a) $28\frac{3}{4}$ (b) $29\frac{2}{3}$ (c) $28\frac{5}{6}$ (d) $28\frac{11}{12}$

16. Multiply: $7\frac{3}{8} \times \frac{8}{9}$ 16. _____

- (a) $6\frac{2}{9}$ (b) $6\frac{17}{18}$ (c) $7\frac{1}{3}$ (d) $6\frac{5}{9}$

17. Divide: $2\frac{5}{6} \div \frac{34}{12}$ 17. _____

- (a) 1 (b) $1\frac{1}{3}$ (c) $1\frac{1}{2}$ (d) $1\frac{1}{6}$

Solve the following application problems.

- 18.** Jack Ennings is a freelancer who works 35 hours a week. He worked $6\frac{1}{12}$ hours on Monday, $7\frac{1}{3}$ hours on Tuesday, $9\frac{1}{4}$ hours on Wednesday, and $4\frac{1}{2}$ hours on Thursday. How many hours should Jack work on Friday? **18.** _____
- (a) $9\frac{1}{12}$ (b) $7\frac{5}{6}$ (c) $10\frac{1}{6}$ (d) $8\frac{2}{3}$
- 19.** Julie Fleming owns $90\frac{3}{4}$ acres of land in Arizona. She sells one-third of the land and deeds $\frac{1}{4}$ of the remainder to her son. How many acres of land does she have left? **19.** _____
- (a) $15\frac{1}{8}$ (b) $45\frac{3}{8}$ (c) $60\frac{1}{2}$ (d) $7\frac{9}{16}$
- 20.** Don Baker bought 36 shares of one stock for $\$6\frac{3}{4}$ per share and 45 shares of another stock for $\$7\frac{1}{4}$ per share. How much did he pay altogether? **20.** _____
- (a) \$303.75 (b) \$504.00 (c) \$569.25 (d) \$630.00
- 21.** A certain fabric costs $\$5\frac{1}{4}$ per yard. How many yards can you buy for \$194.25? **21.** _____
- (a) 199 (b) 37 (c) 39 (d) 189
- 22.** Convert .06 to a fraction. **22.** _____
- (a) $\frac{3}{5}$ (b) $\frac{4}{50}$ (c) $\frac{3}{50}$ (d) $\frac{3}{500}$
- 23.** Convert .615 to a fraction. **23.** _____
- (a) $\frac{123}{500}$ (b) $\frac{615}{10}$ (c) $\frac{121}{200}$ (d) $\frac{123}{200}$
- 24.** Convert $\frac{6}{7}$ to a decimal. Round to the nearest thousandth. **24.** _____
- (a) 1.167 (b) 1.1667 (c) .8571 (d) .857
- 25.** Convert $\frac{11}{24}$ to a decimal. Round to the nearest thousandth. **25.** _____
- (a) .4583 (b) 2.182 (c) .458 (d) 2.1818

For each question, select the letter that corresponds to the correct answer.

1. Write $\frac{177}{354}$ in lowest terms. 1. _____
(a) $\frac{59}{118}$ (b) $\frac{1}{2}$ (c) $\frac{177}{354}$ (d) 2
2. Write $\frac{345}{600}$ in lowest terms. 2. _____
(a) $\frac{6}{50}$ (b) $\frac{1}{2}$ (c) $\frac{69}{120}$ (d) $\frac{23}{40}$
3. Write $\frac{72}{192}$ in lowest terms. 3. _____
(a) $\frac{1}{2}$ (b) $\frac{3}{8}$ (c) $\frac{9}{24}$ (d) $\frac{7}{19}$
4. Convert $\frac{33}{5}$ to a mixed number. Write in lowest terms. 4. _____
(a) $6\frac{3}{5}$ (b) $6\frac{5}{15}$ (c) $6\frac{5}{3}$ (d) $6\frac{1}{3}$
5. Convert $\frac{258}{36}$ to mixed number. Write in lowest terms. 5. _____
(a) $7\frac{6}{36}$ (b) $7\frac{1}{6}$ (c) $6\frac{1}{7}$ (d) $1\frac{6}{7}$
6. Convert $\frac{54}{24}$ to mixed number. Write in lowest terms. 6. _____
(a) $2\frac{1}{4}$ (b) $2\frac{1}{2}$ (c) $2\frac{3}{12}$ (d) 2
7. Convert $6\frac{1}{7}$ to an improper fraction. 7. _____
(a) 6 (b) $\frac{39}{7}$ (c) $\frac{40}{7}$ (d) $\frac{43}{7}$
8. Convert $34\frac{3}{4}$ to an improper fraction. 8. _____
(a) $\frac{136}{4}$ (b) $\frac{139}{4}$ (c) $\frac{106}{3}$ (d) $\frac{106}{4}$

9. Convert $14\frac{7}{8}$ to an improper fraction. 9. _____

- (a) $\frac{112}{8}$ (b) $\frac{121}{8}$ (c) $\frac{115}{8}$ (d) $\frac{119}{8}$

10. Find the LCD for $\frac{3}{14}$ and $\frac{25}{26}$. 10. _____

- (a) 2 (b) 364 (c) 182 (d) 7

11. Find the LCD for $\frac{5}{6}$, $\frac{13}{28}$, and $\frac{24}{25}$. 11. _____

- (a) 420 (b) 2100 (c) 210 (d) 820

12. Find the LCD for $\frac{1}{3}$, $\frac{9}{10}$, and $\frac{5}{12}$. 12. _____

- (a) 60 (b) 150 (c) 30 (d) 300

Solve the following problems.

13. Add: $1\frac{5}{6} + \frac{2}{3} + \frac{11}{12}$ 13. _____

- (a) $2\frac{5}{12}$ (b) $3\frac{1}{2}$ (c) $3\frac{7}{12}$ (d) $3\frac{5}{12}$

14. Subtract: $17\frac{1}{6} - 4\frac{2}{3}$ 14. _____

- (a) $13\frac{1}{2}$ (b) $13\frac{1}{3}$ (c) $12\frac{1}{2}$ (d) 13

15. Subtract: $12\frac{13}{15} - 4\frac{5}{6}$ 15. _____

- (a) $8\frac{1}{30}$ (b) $8\frac{3}{10}$ (c) $7\frac{1}{30}$ (d) 8

16. Multiply: $2\frac{1}{7} \times \frac{14}{5}$ 16. _____

- (a) $\frac{209}{35}$ (b) 20 (c) 6 (d) $\frac{75}{98}$

17. Divide: $11\frac{1}{4} \div 3$ 17. _____

- (a) $14\frac{2}{3}$ (b) $\frac{4}{135}$ (c) $3\frac{3}{4}$ (d) $\frac{4}{15}$

Solve the following application problems.

- 18.** Lisa Evans has a 30-page term paper due on Monday. She wrote $5\frac{1}{6}$ pages on Thursday, $7\frac{1}{3}$ pages on Friday, and $9\frac{3}{4}$ pages on Saturday. How many pages must she write on Sunday to complete the assignment? **18.** _____
- (a) $7\frac{3}{4}$ (b) $8\frac{2}{3}$ (c) $7\frac{5}{12}$ (d) $8\frac{3}{4}$
- 19.** Charles Franke is building a bookshelf. He has a piece of wood $18\frac{3}{4}$ feet long. He uses four pieces, each $2\frac{1}{8}$ feet long, for the shelves, and two pieces, each 3 feet long, for the side supports. How much wood is left over? **19.** _____
- (a) $14\frac{1}{2}$ feet (b) $13\frac{5}{8}$ feet (c) $7\frac{1}{4}$ feet (d) $4\frac{1}{4}$ feet
- 20.** Elza Wilding bought 48 shares of one stock for $\$15\frac{3}{4}$ per share and 42 shares of another stock for $\$11\frac{1}{8}$ per share. How much did she pay altogether? **20.** _____
- (a) \$1001.25 (b) \$1223.25 (c) \$1128.75 (d) \$1417.50
- 21.** A logger is clearing land and cuts down a tree that is 140 feet long. He cuts the tree into logs of length $1\frac{1}{4}$ feet. How many logs can he cut? **21.** _____
- (a) 175 (b) 35 (c) 112 (d) 560
- 22.** Convert .125 to a fraction. **22.** _____
- (a) $\frac{125}{1000}$ (b) $\frac{7}{8}$ (c) $\frac{1}{8}$ (d) $1\frac{1}{4}$
- 23.** Convert .36 to a fraction. **23.** _____
- (a) $\frac{9}{25}$ (b) $\frac{3}{5}$ (c) $\frac{2}{5}$ (d) $\frac{8}{25}$
- 24.** Convert $\frac{7}{17}$ to a decimal. Round to the nearest thousandth. **24.** _____
- (a) .4118 (b) .412 (c) 2.429 (d) 2.4286
- 25.** Convert $\frac{3}{16}$ to a decimal. Round to the nearest thousandth. **25.** _____
- (a) 5.33 (b) 5.333 (c) .188 (d) .1875

