Chapter 1: Fractions and Decimals

Review Set 1 (pages 11–12)

1. $\frac{6}{6}, \frac{7}{5}$

2. $\frac{1}{4}, \frac{1}{14}$

3. $1\frac{2}{9}, 1\frac{1}{4}, 5\frac{7}{8}$

4. $\frac{3}{4} = \frac{6}{8}$, $\frac{1}{5} = \frac{2}{10}$, $\frac{3}{9} = \frac{1}{3}$

5. $6\frac{1}{2} = \frac{13}{2}$ $\quad \frac{(6\times2)+1}{2} = \frac{13}{2}$

6. $1\frac{1}{5} = \frac{6}{5}$ $\quad \frac{(5\times1)+1}{5} = \frac{6}{5}$

7. $10\frac{2}{3} = \frac{32}{3}$ $\quad \frac{(10\times3)+2}{3} = \frac{32}{3}$

8. $7\frac{5}{6} = \frac{47}{6}$ $\quad \frac{(7\times6)+5}{6} = \frac{47}{6}$

9. $\frac{\overset{2}{\cancel{24}}}{\underset{1}{\cancel{12}}} = 2$

10. $\frac{\overset{1}{\cancel{8}}}{\underset{1}{\cancel{8}}} = 1$

11. $\frac{30}{9} = 3\frac{3}{9} = 3\frac{1}{3}$

$$9\overline{)30}\quad 3,\ 27,\ 3$$

12. $\frac{100}{75} = 1\frac{25}{75} = 1\frac{1}{3}$

$$75\overline{)100}\quad 1,\ 75,\ 25$$

13. $\frac{3}{4} \times \frac{2}{2} = \frac{6}{8}$

14. $\frac{1}{4} \times \frac{4}{4} = \frac{4}{16}$

15. $\frac{2}{5} \times \frac{2}{2} = \frac{4}{10}$

16. $\frac{2}{3} \times \frac{3}{3} = \frac{6}{9}$

17. $\frac{1}{100}$ **is larger than** $\frac{1}{150}$

The numerators are the same. The fraction with the smaller denominator has the greater value.

18. $\frac{1}{10\,000}$ **is smaller than** $\frac{1}{1000}$

    The numerators are the same. The fraction with the larger denominator has the lesser value.

19. $\frac{5}{9}$ **is larger than** $\frac{2}{9}$

    The denominators are both the same. The fraction with the larger numerator has the greater value.

20. $\frac{3}{10}$ **is smaller than** $\frac{5}{10}$

    The denominators are both the same. The fraction with the smaller numerator has the lesser value.

21. 300 mL – 180 mL = 120 mL remaining

    $\frac{\overset{4}{\cancel{120}}}{\underset{10}{\cancel{300}}} = \frac{\overset{2}{4}}{\underset{5}{\cancel{10}}} = \frac{2}{5}$ **of the fluid in the bottle remains**

22. **600 mL Day 2; 900 mL Day 3; 1350 mL Day 4**

    Day 1: 200 mL twice daily = 200 × 2 = 400 mL daily

    Day 2: 400 mL daily from Day 1 + (increase by $\frac{1}{2}$ × 400 mL) = 400 + $\frac{400}{2}$ = 400 + 200 = 600 mL

    Day 3: 600 mL daily from Day 2 + (increase by $\frac{1}{2}$ × 600 mL) = 600 + $\frac{600}{2}$ = 600 + 300 = 900 mL

    Day 4: 900 mL daily from Day 3 + (increase by $\frac{1}{2}$ × 900 mL) = 900 + $\frac{900}{2}$ = 900 + 450 = 1350 mL

23. $\frac{1}{20}$ **of the class are men**

    57
    +3
    60 people in class

    The men represent 3 out of 60 or $\frac{3}{60}$ or $\frac{1}{20}$ **of the class.**

24. $\frac{18}{20} = \frac{9}{10}$ **of the questions were answered correctly.**

25. $\frac{1}{4}$

    $\frac{1}{4} \times \frac{6}{6} = \frac{6}{24}$

    $\frac{1}{6} \times \frac{4}{4} = \frac{4}{24}$

    $\frac{1}{8} \times \frac{3}{3} = \frac{3}{24}$

    Therefore, $\frac{6}{24}$ or $\frac{1}{4}$ **is the largest fraction.**

    Also, since the numerators are the same, the denominator that is smallest would be the larger fraction.

Review Set 2 (pages 14–15)

1. $7\frac{4}{5} = 7\frac{12}{15}$
$+\frac{2}{3} = \frac{10}{15}$
$7\frac{22}{15} = \mathbf{8\frac{7}{15}}$

2. $\frac{3}{4} = \frac{9}{12}$
$+\frac{2}{3} = \frac{8}{12}$
$\frac{17}{12} = \mathbf{1\frac{5}{12}}$

3. $4\frac{2}{3} = 4\frac{16}{24}$
$5\frac{1}{24} = 5\frac{1}{24}$
$+7\frac{1}{2} = 7\frac{12}{24}$
$16\frac{29}{24} = \mathbf{17\frac{5}{24}}$

4. $\frac{3}{4} = \frac{18}{24}$
$\frac{1}{8} = \frac{3}{24}$
$+\frac{1}{6} = \frac{4}{24}$
$\frac{25}{24} = \mathbf{1\frac{1}{24}}$

5. $12\frac{1}{2} = 12\frac{3}{6}$
$+20\frac{1}{3} = 20\frac{2}{6}$
$\mathbf{32\frac{5}{6}}$

6. $\frac{1}{7} = \frac{3}{21}$
$\frac{2}{3} = \frac{14}{21}$
$+\frac{11}{21} = \frac{11}{21}$
$\frac{28}{21} = 1\frac{7}{21} = \mathbf{1\frac{1}{3}}$

7. $\frac{4}{9} = \frac{32}{72}$
$\frac{5}{8} = \frac{45}{72}$
$+4\frac{2}{3} = 4\frac{48}{72}$
$4\frac{125}{72} = \mathbf{5\frac{53}{72}}$

8. $34\frac{1}{2}$
$+8\frac{1}{2}$
$42\frac{2}{2} = \mathbf{43}$

9. $\frac{12}{17} = \frac{84}{119}$
$+ 5\frac{2}{7} = 5\frac{34}{119}$
$\mathbf{5\frac{118}{119}}$

10. $\frac{6}{5} = \frac{18}{15}$
$+1\frac{1}{3} = 1\frac{5}{15}$
$1\frac{23}{15} = \mathbf{2\frac{8}{15}}$

11. $\frac{3}{4}$
$-\frac{1}{4}$
$\frac{2}{4} = \mathbf{\frac{1}{2}}$

12. $8\frac{1}{12} = 7\frac{13}{12}$
$-3\frac{1}{4} = 3\frac{3}{12}$
$4\frac{10}{12} = \mathbf{4\frac{5}{6}}$

13. $\frac{1}{8} = \frac{3}{24}$
$-\frac{1}{12} = \frac{2}{24}$
$\mathbf{\frac{1}{24}}$

14. $100 = 99\frac{3}{3}$
$-36\frac{1}{3} = 36\frac{1}{3}$
$\mathbf{63\frac{2}{3}}$

15. $\frac{1}{3} = \frac{2}{6}$
$-\frac{1}{6} = \frac{1}{6}$
$\mathbf{\frac{1}{6}}$

16. $2\frac{3}{5}$
$-1\frac{1}{5}$
$\mathbf{1\frac{2}{5}}$

17. $14\frac{3}{16} = 14\frac{3}{16}$
$\underline{-\ 7\frac{1}{8} = \ 7\frac{2}{16}}$
$\mathbf{7\frac{1}{16}}$

18. $25 = 24\frac{9}{9}$
$\underline{-17\frac{7}{9} = 17\frac{7}{9}}$
$\mathbf{7\frac{2}{9}}$

19. $4\frac{7}{10} = 4\frac{14}{20}$
$\underline{-3\frac{9}{20} = 3\frac{9}{20}}$
$1\frac{5}{20} = \mathbf{1\frac{1}{4}}$

20. $27 - 17\frac{1}{2} = 26\frac{2}{2} - 17\frac{1}{2} = \mathbf{9\frac{1}{2}}$ **litres**

21. $\mathbf{\frac{1}{12}}$

$\frac{1}{1} \times \frac{12}{12} = \frac{12}{12}$; $\frac{2}{3} \times \frac{4}{4} = \frac{8}{12}$; $\frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$

$\frac{8}{12} + \frac{3}{12} = \frac{11}{12}$

$\frac{12}{12} - \frac{11}{12} = \frac{1}{12}$

22. $\mathbf{1\frac{1}{2}}$ **tablets daily**

$\frac{1}{2} \times 3 = \frac{3}{2} = 1\frac{1}{2}$

23. $\mathbf{4\frac{11}{12}}$ **cups of fluid**

$1\frac{1}{2} + 1 + \frac{2}{3} + 1\frac{3}{4} = \frac{3}{2} + 1 + \frac{2}{3} + \frac{7}{4}$

$= \frac{18}{12} + \frac{12}{12} + \frac{8}{12} + \frac{21}{12} = \frac{59}{12} = 4\frac{11}{12}$

24. $\mathbf{2\frac{11}{12}}$ **km left to walk**

$1\frac{1}{4} = 1\frac{3}{12}$
$1\frac{1}{3} = 1\frac{4}{12}$
$1\frac{1}{2} = 1\frac{6}{12}$
$\underline{+\ 1 = \ 1}$
$4\frac{13}{12} = 5\frac{1}{12}$

$8 - 5\frac{1}{12} = 7\frac{12}{12} - 5\frac{1}{12} = 2\frac{11}{12}$ km left to walk

25. $\mathbf{112\frac{1}{4}}$ **apples eaten**

$54\frac{1}{2} = 54\frac{2}{4}$
$\underline{+57\frac{3}{4} = 57\frac{3}{4}}$
$111\frac{5}{4} = 112\frac{1}{4}$ apples eaten

Review Set 3 (pages 20–21)

1. $\frac{\overset{1}{\cancel{3}}}{10} \times \frac{1}{\underset{4}{\cancel{12}}} = \mathbf{\frac{1}{40}}$

2. $\frac{12}{25} \times \frac{3}{5} = \mathbf{\frac{36}{125}}$

3. $\frac{5}{8} \times 1\frac{1}{6} = \frac{5}{8} \times \frac{7}{6} = \mathbf{\frac{35}{48}}$

4. $\frac{1}{100} \times 3 = \mathbf{\frac{3}{100}}$

5. $\frac{\frac{1}{6}}{\frac{1}{4}} \times \frac{3}{\frac{2}{3}} = \left(\frac{1}{6} \div \frac{1}{4}\right) \times \left(\frac{3}{1} \div \frac{2}{3}\right) = \left(\frac{1}{6} \times \frac{4}{1}\right) \times \left(\frac{3}{1} \times \frac{3}{2}\right)$

   $= \underset{3}{\overset{2}{\cancel{4}}} \times \frac{9}{2} = \underset{1}{\overset{1}{\cancel{2}}} \times \underset{1}{\overset{3}{\cancel{9}}} = \mathbf{3}$

6. $\frac{\frac{1}{150}}{\frac{1}{100}} \times \mathbf{2\frac{1}{2}} = \left(\frac{1}{150} \div \frac{1}{100}\right) \times \mathbf{2\frac{1}{2}}$

   $= \frac{1}{\underset{3}{\cancel{150}}} \times \frac{\overset{2}{\cancel{100}}}{1} \times \frac{5}{2}$

   $= \frac{1}{3} \times \frac{\overset{1}{\cancel{2}}}{1} \times \underset{1}{\frac{5}{\cancel{2}}}$

   $= \frac{5}{3} = \mathbf{1\frac{2}{3}}$

7. $\frac{30}{75} \times 2 = \frac{60}{75} = \mathbf{\frac{4}{5}}$

8. $9\frac{4}{5} \times \frac{2}{3} = \frac{49}{5} \times \frac{2}{3} = \frac{98}{15} = \mathbf{6\frac{8}{15}}$

9. $\underset{2}{\frac{\overset{1}{\cancel{3}}}{4}} \times \underset{1}{\frac{\overset{1}{\cancel{2}}}{\cancel{3}}} = \mathbf{\frac{1}{2}}$

10. $4\frac{2}{3} \times 5\frac{1}{24} = \frac{\overset{7}{\cancel{14}}}{3} \times \underset{12}{\frac{121}{\cancel{24}}} = \frac{847}{36} = \mathbf{23\frac{19}{36}}$

11. $\frac{3}{4} \times \frac{1}{8} = \mathbf{\frac{3}{32}}$

12. $\frac{3}{4} \div \frac{1}{4} = \underset{1}{\frac{3}{4}} \times \frac{\overset{1}{\cancel{4}}}{1} = \mathbf{3}$

13. $6\frac{1}{12} \div 3\frac{1}{4} = \frac{73}{12} \div \frac{13}{4} = \underset{3}{\frac{73}{\cancel{12}}} \times \frac{\overset{1}{\cancel{4}}}{13} = \frac{73}{39} = \mathbf{1\frac{34}{39}}$

14. $\frac{1}{8} \div \frac{7}{12} = \underset{2}{\frac{1}{\cancel{8}}} \times \frac{\overset{3}{\cancel{12}}}{7} = \mathbf{\frac{3}{14}}$

15. $\frac{1}{33} \div \frac{1}{3} = \frac{1}{\cancel{33}_{11}} \times \frac{\cancel{3}^{1}}{1} = \mathbf{\frac{1}{11}}$

16. $5\frac{1}{4} \div 10\frac{1}{2} = \frac{21}{4} \div \frac{21}{2} = \frac{\cancel{21}^{1}}{\cancel{4}_{2}} \times \frac{\cancel{2}^{1}}{\cancel{21}_{1}} = \mathbf{\frac{1}{2}}$

17. $\frac{1}{60} \div \frac{1}{2} = \frac{1}{\cancel{60}_{30}} \times \frac{\cancel{2}^{1}}{1} = \mathbf{\frac{1}{30}}$

18. $2\frac{1}{2} \div \frac{3}{4} = \frac{5}{2} \div \frac{3}{4} = \frac{5}{\cancel{2}_{1}} \times \frac{4}{3}^{2} = \frac{10}{3} = \mathbf{3\frac{1}{3}}$

19. $\frac{\frac{1}{20}}{\frac{1}{3}} = \frac{1}{20} \div \frac{1}{3} = \frac{1}{20} \times \frac{3}{1} = \mathbf{\frac{3}{20}}$

20. $\frac{\frac{3}{5}}{\frac{3}{4}} \div \frac{\frac{4}{5}}{1\frac{1}{9}} = \left(\frac{3}{5} \div \frac{3}{4}\right) \div \left(\frac{4}{5} \div \frac{10}{9}\right) = \left(\frac{\cancel{3}^{1}}{5} \times \frac{4}{\cancel{3}_{1}}\right) \div \left(\frac{4}{5} \times \frac{9}{\cancel{10}_{5}}\right) = \frac{4}{5} \div \frac{\cancel{18}^{2}}{\cancel{25}_{1}\ \cancel{5}_{9}} = \frac{4}{\cancel{5}} \times \frac{\cancel{25}^{5}}{\cancel{18}_{9}} = \frac{10}{9} = \mathbf{1\frac{1}{9}}$

21. $\frac{80 \text{ calories}}{1 \text{ apple}} = \frac{\text{x calories}}{\frac{3}{4} \text{ apple}}$

$X = \frac{3}{\cancel{4}_{1}} \times \cancel{80}^{20}$

X = **60 calories**

22. $\frac{60 \text{ sec}}{1 \text{ min}} = \frac{\text{x sec}}{9\frac{1}{3} \text{ min}}$

$X = 9\frac{1}{3} \times 60 = \frac{28}{\cancel{3}_{1}} \times \cancel{60}^{20} = 560$

X = **560 seconds**

23. $1\frac{1}{2}$ tablets = 1 dose

30 tablets = $\frac{30}{1\frac{1}{2}}$ = **20 doses**

24. $1\frac{1}{2}$ tablets per dose × 3 doses per day = $1\frac{1}{2} \times 3 = \frac{3}{2} \times 3 = \frac{9}{2} = 4\frac{1}{2}$ tablets per day

$4\frac{1}{2}$ tablets per day × 7 days = $4\frac{1}{2} \times 7 = \frac{9}{2} \times 7 = \frac{63}{2} = \mathbf{31\frac{1}{2}}$ **tablets**

25. $\frac{1}{3}$ full means the patient drank $\frac{2}{3}$ pitcher; $\frac{2}{3}$ pitcher = 850 mL

$\frac{\frac{2}{3} \text{ pitcher}}{850 \text{ mL}} \quad \frac{1 \text{ pitcher}}{\text{x mL}}$

$\frac{2}{3}X = 850$

$\frac{\frac{\cancel{2}}{\cancel{3}}X}{\frac{\cancel{2}}{\cancel{3}}} = \frac{850}{\frac{2}{3}}$

$X = 850 \div \frac{2}{3} = 850 \times \frac{3}{2} = \frac{2550}{2} = \mathbf{1275 \text{ mL}}$

Review Set 4 (pages 27–28)

1. **0.2; two tenths**

2. $\frac{85}{100} = \mathbf{\frac{17}{20}}$; $\mathbf{0.85}$

3. $1\frac{5}{100} = \mathbf{1\frac{1}{20}}$; **one and five hundredths**

4. $\frac{6}{1000} = \mathbf{\frac{3}{500}}$; **six thousandths**

5. **10.015; ten and fifteen thousandths**

$$
\begin{array}{r}
0.015 \\
200\overline{)\,3.000} \\
\underline{200} \\
1000 \\
\underline{1000} \\
0
\end{array}
$$

6. $1\mathbf{\frac{9}{10}}$; **one and nine tenths**

7. $5\mathbf{\frac{1}{10}}$; $\mathbf{5.1}$

8. **0.8; eight tenths**

$$
\begin{array}{r}
0.8 \\
5\overline{)\,4.0} \\
\underline{40} \\
0
\end{array}
$$

9. $250\,\frac{5}{10} = \mathbf{250\,\frac{1}{2}}$; **two hundred fifty and five tenths**

10. **33.03; thirty-three and three hundredths**

$$
\begin{array}{r}
0.03 \\
100\overline{)\,3.00} \\
\underline{300} \\
0
\end{array}
$$

11. $\frac{95}{100} = \mathbf{\frac{19}{20}}$; **ninety-five hundredths**

12. **2.75; two and seventy-five hundredths**

$$
\begin{array}{r}
0.75 \\
4\overline{)\,3.00} \\
\underline{28} \\
20 \\
\underline{20} \\
0
\end{array}
$$

13. $7\frac{5}{1000} = \mathbf{7\frac{1}{200}}$; $\mathbf{7.005}$

$$
\begin{array}{r}
0.005 \\
200\overline{)\,1.000} \\
\underline{1000} \\
0
\end{array}
$$

14. **1000.005; one thousand and five thousandths**

$$
\begin{array}{r}
0.005 \\
200\overline{)\,1.000}
\end{array}
$$

15. $4085\frac{75}{1000} = \mathbf{4085\frac{3}{40}}$; **4085.075**

$$\begin{array}{r} 0.075 \\ 40\overline{)3.000} \\ \underline{280} \\ 200 \\ \underline{200} \\ 0 \end{array}$$

16. 0.017 = **0.0170**

17. 0.2500 = **0.25, twenty-five hundredths**

18. $\frac{75}{100} = \mathbf{0.75}$**, seventy-five hundredths**

19. $0.045 = \frac{45}{1000} = \mathbf{\frac{9}{200}}$

20. 0.012
0.120 ← largest
0.021

21. 0.635 = 0.635
0.6 = 0.600
0.063 = 0.063 ← smallest

22. **False.** 0.375 = 0.3750, which is not equal to 0.0375

23. **False.** 2.2 grams = 2.20 grams, which is not equal to 2.02 grams

24. **True**. 6.5 ounces = 6.500 ounces

25. 0.5 gram through 2 grams is 0.50 to 2.00 grams.
From the given list, 0.8 grams (0.80 grams) and 1.25 grams fall within the range.

Review Set 5 (pages 29–30)

1. $\begin{array}{r} 0.160 \\ 5.375 \\ 1.050 \\ \underline{+\ 16.000} \\ \mathbf{22.585} \end{array}$

2. $\begin{array}{r} 7.517 \\ 3.200 \\ 0.160 \\ \underline{+\ 33.300} \\ \mathbf{44.177} \end{array}$

3. $\begin{array}{r} 13.009 \\ \underline{-\ 0.700} \\ \mathbf{12.309} \end{array}$

4. 5.125
   6.025
   + 0.150
   11.300 = **11.3**

5. 175.100
   + 0.099
   175.199

6. 25.200
   − 0.193
   25.007

7. 0.580
   − 0.062
   0.518

8. $10.10
   − 0.62
   $9.48

9. $19.00
   − 0.09
   $18.91

10. $5.05
    0.17
    + 17.49
    $22.71

11. 4.000
    1.980
    0.420
    + 0.003
    6.403

12. 0.30
    − 0.03
    0.27

13. 16.30
    − 12.15
    4.15

14. 2.50
    − 0.99
    1.51

15. 5.00
2.50
0.05
0.15
+ 2.55
10.25

16. 0.030
0.160
+ 2.327
2.517

17. 700.00
− 325.65
374.35

18. 645.32
− 40.90
604.42

19. 18.000
2.350
7.006
+ 0.093
27.449

20. 13.529
+ 10.090
23.619

21. 0.100
0.125
0.001
0.350
+ 0.121
0.697 gram

22. 15.0 + 7.5 = 22.5 30 − 22.5 = **7.5 mg of medication**

23. $16 709.43
− 14 651.37
$2 058.06 balance due

24. 0.15
× 20
3 kg

25. 3 h 20 min
40 min
3 h 30 min
24 min
\+ 12 min
6 h 126 min 126 min = 2 h 6 min

6 h 126 min = 6 h + 2 h 6 min = 8 h 6 min

1 h = 60 min

8 h 6 min = $8\frac{6}{60} = 8\frac{1}{10} =$ **8.1 hours**

Review Set 6 (pages 36–37)

1. 1.16
× 5.03
348
5800
5.8348 = **5.83**

2. 0.314
× 7
2.198 = 2.20 = **2.2**

3. 1.71
× 25
855
342
42.75

4. 3.002
× 0.05
0.15010 = **0.15**

5. 75.1
× 1000.01
751
7510000
75100.751 = **75 100.75**

6. 16.03
× 2.05
8015
32060
32.86

7. 55.50
× 0.05
2.7750 = **2.78**

8.
$$\begin{array}{r} 23.2 \\ \times 15.025 \\ \hline 1160 \\ 464 \\ 11600 \\ 232 \\ \hline 348.5800 \end{array} = \mathbf{348.58}$$

9. $16 \div 0.04 = \mathbf{400}$

$$0.04\overline{)16.00} \quad 4\,00$$
$$16$$
$$00$$

10. $25.3 \div 6.76 = \mathbf{3.74}$

$$6.76\overline{)25.30.000} \quad 3.742$$
$$2028$$
$$5020$$
$$4732$$
$$2880$$
$$2704$$
$$1760$$
$$1352$$
$$408$$

11. $0.02 \div 0.004 = \mathbf{5}$

$$0.004\overline{)0.020.0} \quad 5.0$$
$$20$$
$$0$$

12. $45.5 \div 15.25 = \mathbf{2.98}$

$$15.25\overline{)45.50.000} \quad 2.983$$
$$3050$$
$$15000$$
$$13725$$
$$12750$$
$$12200$$
$$5500$$
$$4575$$
$$925$$

13. $73 \div 13.40 = \mathbf{5.45}$

$$13.40\overline{)73.00.000} \quad 5.447$$
$$6700$$
$$6000$$
$$5360$$
$$6400$$
$$5360$$
$$10400$$
$$9380$$
$$1020$$

14. 16.36 ÷ 0.06 = **272.67**

```
      272.666
0.06.|16.36.000
     12
      43
      42
       16
       12
        40
        36
         40
         36
          40
          36
           4
```

15. 0.375 ÷ 0.25 = **1.5**

```
       1.5
0.25.|0.37.5
      25
      125
      125
        0
```

16. 100.04 ÷ 0.002 = **50 020**

```
      50 020
0.002.|100.040.
      10
       0004
          4
          00
```

17. 562.5 × 100 = **562.50**. = **56 250**
18. 16 × 10 = **16.0.** = **160**
19. 25 ÷ 1000 = **.025.** = **0.025**
20. 32.005 ÷ 1000 = **.032.005** = **0.032005**
21. 23.25 × 10 = **23.2.5 = 232.5**
22. 717.717 ÷ 10 = **71.7.717** = **71.7717**
23. 83.16 × 10 = **83.1.6** = **831.6**
24. 0.33 × 100 = **0.33.** = **33**
25. 14.106 × 1000 = **14.106.** = **14 106**

Practice Problems—Chapter 1 (pages 37–39)

1. $0.35 = \frac{35}{100} = \mathbf{\frac{7}{20}}$

2. $\frac{3}{8} = \mathbf{0.375}$

$$
\begin{array}{r}
0.375 \\
8\overline{)\,3.000} \\
\underline{24} \\
60 \\
\underline{56} \\
40 \\
\underline{40} \\
0
\end{array}
$$

3. LCD = **21**

4. LCD = **55**

5. LCD = **18**

6. LCD =**15**

7. $1\frac{2}{3} = 1\frac{10}{15}$
$+\frac{9}{5} = \frac{27}{15}$
$1\frac{37}{15} = \mathbf{3\frac{7}{15}}$

8. $4\frac{5}{12} + 3\frac{1}{15} = 4\frac{25}{60} + 3\frac{4}{60} = \mathbf{7\frac{29}{60}}$

9. $\frac{7}{9} = \frac{14}{18}$
$-\frac{5}{18} = \frac{5}{18}$
$\frac{9}{18} = \mathbf{\frac{1}{2}}$

10. $5\frac{1}{6} = 5\frac{4}{24} = \frac{124}{24}$
$-2\frac{7}{8} = 2\frac{21}{24} = \frac{69}{24}$
$\frac{55}{24} = \mathbf{2\frac{7}{24}}$

11. $\frac{\overset{1}{\cancel{4}}}{9} \times \frac{7}{\underset{3}{\cancel{12}}} = \mathbf{\frac{7}{27}}$

12. $1\frac{1}{2} \times 6\frac{3}{4} = \frac{3}{2} \times \frac{27}{4} = \frac{81}{8} = \mathbf{10\frac{1}{8}}$

13. $7\frac{1}{5} \div 1\frac{7}{10} = \frac{36}{5} \div \frac{17}{10} = \frac{36}{\underset{1}{\cancel{5}}} \times \frac{\overset{2}{\cancel{10}}}{17} = \frac{72}{17} = \mathbf{4\frac{4}{17}}$

14. $\frac{3}{16} + \frac{3}{10} = \frac{15}{80} + \frac{24}{80} = \mathbf{\frac{39}{80}}$

15. $8\frac{4}{11} \div 1\frac{2}{3} = \frac{92}{11} \div \frac{5}{3} = \frac{92}{11} \times \frac{3}{5} = \frac{276}{55} = \mathbf{5\frac{1}{55}}$

16. $\frac{9\frac{1}{2}}{1\frac{4}{5}} = \frac{19}{2} \times \frac{5}{9} = \frac{95}{18} = \mathbf{5\frac{5}{18}}$

17. $\frac{13\frac{1}{3}}{4\frac{6}{13}} = \frac{\frac{40}{3}}{\frac{58}{13}} = \frac{40}{3} \times \frac{13}{58} = \frac{520}{174} = 2\frac{172}{174} = \mathbf{2\frac{86}{87}}$

18. $\frac{\frac{1}{10}}{\frac{2}{3}} = \frac{1}{10} \div \frac{2}{3} = \frac{1}{10} \times \frac{3}{2} = \mathbf{\frac{3}{20}}$

19. $\frac{1}{125} \times \frac{1}{25} = \frac{1}{125 \times 25} = \mathbf{\frac{1}{3125}}$

20. $\frac{\frac{7}{8}}{\frac{1}{3}} \div \frac{3\frac{1}{2}}{\frac{1}{3}} = \frac{\frac{7}{8} \times \frac{3}{1}}{\frac{7}{2} \times \frac{3}{1}} = \frac{\frac{21}{8}}{\frac{21}{2}} = \frac{\cancel{21}}{8} \times \frac{2}{\cancel{21}} = \frac{2}{8} = \mathbf{\frac{1}{4}}$

21. $\frac{20}{35} \times 3 = \frac{60}{35} = 1\frac{25}{35} = \mathbf{1\frac{5}{7}}$

22. $2\frac{1}{4} \times 7\frac{1}{8} = \frac{9}{4} \times \frac{57}{8} = \frac{513}{32} = \mathbf{16\frac{1}{32}}$

23.
$$\begin{array}{r} 11.33 \\ 29.16 \\ +19.78 \\ \hline \mathbf{60.27} \end{array}$$

24.
$$\begin{array}{r} 93.712 \\ -26.970 \\ \hline 66.742 = \mathbf{66.74} \end{array}$$

25. $43.69 - 0.7083 = \mathbf{42.98}$

$$\begin{array}{r} 43.6900 \\ -\ 0.7083 \\ \hline 42.9817 = 42.98 \end{array}$$

26. $66.4 \times 72.8 = \mathbf{4833.92}$

$$\begin{array}{r} 66.4 \\ \times 72.8 \\ \hline 5312 \\ 1328 \\ 4648 \\ \hline 4833.92 \end{array}$$

27.
$$\begin{array}{r} 360 \\ \times 0.53 \\ \hline 1080 \\ 1800 \\ \hline 190.80 = \mathbf{190.8} \end{array}$$

28. $268.4 \div 14 = \frac{268.4}{14} =$ **19.17**

```
   19.17
14)268.40
   14
   128
   126
    24
    14
    100
     98
      2
```

29. $10.10 - 0.62 =$ **9.48**

```
  10.10
- 0.62
  9.48
```

30. $5 + 2.5 + 0.05 + 0.15 =$ **7.7**

```
  5.00
  2.50
  0.05
+0.15
  7.70
```

31. $1.71 \times 25 =$ **42.75**

```
   1.71
×   25
   855
  342
  42.75
```

32. $45 \div 0.15 =$ **300**

```
    300
0.15)45.00
   45
    000
```

33. $2974 \div 0.23 =$ **12 930.43**

```
   12930.43
0.23)2974.0000
   23
    67
    46
     214
     207
      70
      69
       100
        92
         80
         69
          11
```

34. $51.21 \div 0.016 =$ **3200.63**

$$0.016\overline{)51.210.000} = 3200.63$$

48
32
32
0100
96
40
32
80
64
16

35. $0.74 \div 0.37 = \frac{0.74}{0.37} =$ **2**

$$0.37\overline{)0.74} = 2$$

74
0

36. $1.5 + 146.73 + 1.9 + 0.832 =$ **150.96**

1.500
146.730
1.900
0.832
150.962 = **150.96**

37. $9.716 \times 1000 = 9.716 =$ **9716**

38. $50.25 \div 100 = 50.25 =$ **0.5025**

39. $0.25 \times 100 =$ **25**

40. $5.75 \times 1000 = 5.750 =$ **5750**

41. $0.25 \div 10 = 0.25 =$ **0.025**

42. $11.525 \times 10 =$ **115.25**

43. 4 tablets × 0.4 mg/tablet = **0.16 mg**

44. (1 assignment − 1/2 assignment completed) = 1/2 assignment remaining
1/2 assignment remaining divided by 4 students = 1/2 × 1/4
= **1/8 assignment remaining per student**

45. $\frac{0.1 \text{ mg}}{1 \text{ tablet}} \times 3.5$ tablets = **0.35 mg**

46. **$915.08**

$17.43
× 40
$697.20 earned for 40 hours

Twice the hourly rate = \$17.43 × 2 = \$ 34.86

\$34.86
× 6.25
17430
6972
20916
\$217.8750

= \$217.88 earned at twice the hourly rate for 6.25 hours

Total pay: \$697.20
+217.88
\$915.08

47. The catheters cost **\$8.23** each when purchased as a single box of 12 catheters.

\$8.23
12 | \$98.76
96
27
24
36
36
0

When a case of 12 boxes is purchased, each box of 12 costs **\$81.25.**

\$81.25
12 | \$975.00
96
15
12
30
24
60

The catheters cost **\$6.77** each when a case is purchased.

\$6.77
12 | \$81.25
72
92
84
85
84
1

Savings per catheter when a case is purchased: \$8.23
– 6.77
\$1.46

= **\$1.46 savings per catheter**

48. $1.25 \text{ mg} \div \frac{0.5 \text{ mg}}{\text{tablet}} = 1.25 \text{ mg} \times \frac{1 \text{ tablet}}{0.5 \text{ mg}} =$ **2.5 tablets or $2\frac{1}{2}$ tablets**

49. $1200 \text{ millilitres} \times \frac{2}{3} = \frac{1200 \text{ mL}}{1} \times \frac{2}{3} = 800 \text{ mL}$

800 millilitres should be taken in between the hours of 7:00 AM and 7:00 PM.

50. 6.65 kilograms
– 3.70 kilograms
2.95 kilograms gained