

***Dosage Calculations (Canadian) 5th edition Pickar  
Solutions Manual***

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## Chapter 1: Fractions and Decimals

### REVIEW SET 1-1

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.  $6\frac{1}{2} = \frac{13}{2}$

$$\frac{(6 \times 2) + 1}{2} = \frac{13}{2}$$

6.  $2\frac{3}{4} = \frac{11}{4}$

$$\frac{(2 \times 4) + 3}{4} = \frac{11}{4}$$

7.  $10\frac{2}{3} = \frac{32}{3}$

$$\frac{(10 \times 3) + 2}{3} = \frac{32}{3}$$

8.  $7\frac{5}{6} = \frac{47}{6}$

$$\frac{(7 \times 6) + 5}{6} = \frac{47}{6}$$

9.  $\frac{\overset{3}{\cancel{33}}}{\underset{1}{\cancel{11}}} = 3$

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

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

$$\begin{array}{r} 3 \\ 9 \overline{)30} \\ \underline{27} \\ 3 \end{array}$$

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

$$\begin{array}{r} 1 \\ 75 \overline{)100} \\ \underline{75} \\ 25 \end{array}$$

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 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 the same. The fraction with the smaller numerator has the lesser value.

21.  $300\text{ mL} - 180\text{ mL} = 120\text{ mL}$  remaining

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

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

Day 1:  $200\text{ mL twice daily} = 200 \times 2 = 400\text{ mL daily}$

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

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

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

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.  $\frac{36}{40} = \frac{9}{10}$  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 1-2

$$\begin{array}{r} 1. \quad 6\frac{3}{4} = 6\frac{15}{20} \\ + \frac{3}{5} = \frac{12}{20} \\ \hline 6\frac{27}{20} = 7\frac{7}{20} \end{array}$$

$$\begin{array}{r} 2. \quad \frac{3}{4} = \frac{9}{12} \\ + \frac{2}{3} = \frac{8}{12} \\ \hline \frac{17}{12} = 1\frac{5}{12} \end{array}$$

$$\begin{array}{r} 3. \quad 4\frac{2}{3} = 4\frac{16}{24} \\ 5\frac{1}{24} = 5\frac{1}{24} \\ + 7\frac{1}{2} = 7\frac{12}{24} \\ \hline 16\frac{29}{24} = 17\frac{5}{24} \end{array}$$

$$\begin{array}{r} 4. \quad \frac{3}{4} = \frac{18}{24} \\ \frac{1}{8} = \frac{3}{24} \\ + \frac{1}{6} = \frac{4}{24} \\ \hline \frac{25}{24} = 1\frac{1}{24} \end{array}$$

$$\begin{array}{r} 5. \quad 12\frac{1}{2} = 12\frac{3}{6} \\ + 20\frac{1}{3} = 20\frac{2}{6} \\ \hline 32\frac{5}{6} \end{array}$$

$$\begin{array}{r} 6. \quad \frac{1}{7} = \frac{3}{21} \\ \frac{2}{3} = \frac{14}{21} \\ + \frac{11}{21} = \frac{11}{21} \\ \hline \frac{28}{21} = 1\frac{7}{21} = 1\frac{1}{3} \end{array}$$

$$\begin{array}{r} 7. \quad \frac{4}{9} = \frac{32}{72} \\ \frac{5}{8} = \frac{45}{72} \\ + 4\frac{2}{3} = 4\frac{48}{72} \\ \hline 4\frac{125}{72} = 5\frac{53}{72} \end{array}$$

$$\begin{array}{r} 8. \quad 34\frac{1}{2} \\ + 8\frac{1}{2} \\ \hline 42\frac{2}{2} = \mathbf{43} \end{array}$$

$$\begin{array}{r} 9. \quad \frac{12}{17} = \frac{84}{119} \\ + 5\frac{2}{7} = 5\frac{34}{119} \\ \hline \mathbf{5\frac{118}{119}} \end{array}$$

$$\begin{array}{r} 10. \quad \frac{6}{5} = \frac{18}{15} \\ + 1\frac{1}{3} = 1\frac{5}{15} \\ \hline 1\frac{23}{15} = \mathbf{2\frac{8}{15}} \end{array}$$

$$\begin{array}{r} 11. \quad \frac{3}{4} \\ - \frac{1}{4} \\ \hline \frac{2}{4} = \mathbf{\frac{1}{2}} \end{array}$$

$$\begin{array}{r} 12. \quad 8\frac{1}{12} = 7\frac{13}{12} \\ - 3\frac{1}{4} = 3\frac{3}{12} \\ \hline 4\frac{10}{12} = \mathbf{4\frac{5}{6}} \end{array}$$

$$\begin{array}{r} 13. \quad \frac{1}{8} = \frac{3}{24} \\ - \frac{1}{12} = \frac{2}{24} \\ \hline \mathbf{\frac{1}{24}} \end{array}$$

$$\begin{array}{r} 14. \quad 100 = 99\frac{3}{3} \\ - 36\frac{1}{3} = 36\frac{1}{3} \\ \hline \mathbf{63\frac{2}{3}} \end{array}$$

$$\begin{array}{r} 15. \quad \frac{2}{3} = \frac{4}{6} \\ - \frac{1}{2} = \frac{3}{6} \\ \hline \mathbf{\frac{1}{6}} \end{array}$$

$$\begin{array}{r} 16. \quad 2\frac{3}{5} \\ - 1\frac{1}{5} \\ \hline \mathbf{1\frac{2}{5}} \end{array}$$

$$\begin{array}{r} 17. \quad 14\frac{3}{16} = 14\frac{3}{16} \\ - 7\frac{1}{8} = 7\frac{2}{16} \\ \hline 7\frac{1}{16} \end{array}$$

$$\begin{array}{r} 18. \quad 25 = 24\frac{9}{9} \\ - 17\frac{7}{9} = 17\frac{7}{9} \\ \hline 7\frac{2}{9} \end{array}$$

$$\begin{array}{r} 19. \quad 4\frac{7}{10} = 4\frac{14}{20} \\ - 3\frac{9}{20} = 3\frac{9}{20} \\ \hline 1\frac{5}{20} = 1\frac{1}{4} \end{array}$$

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

$$\begin{array}{l} 21. \quad \frac{1}{12} \\ \frac{1}{1} \times \frac{12}{12} = \frac{12}{12}; \quad \frac{2}{3} \times \frac{4}{4} = \frac{8}{12}; \quad \frac{1}{4} \times \frac{3}{3} = \frac{3}{12} \\ \frac{8}{12} + \frac{3}{12} = \frac{11}{12} \\ \frac{12}{12} - \frac{11}{12} = \frac{1}{12} \end{array}$$

$$22. \quad 1\frac{1}{2} \text{ tablets daily} \quad \frac{1}{2} \times 3 = \frac{3}{2} = 1\frac{1}{2} \text{ tablets daily}$$

$$23. \quad 4\frac{11}{12} \text{ cups of fluid} \quad 1\frac{1}{2} + 1 + \frac{2}{3} + 1\frac{3}{4} = 1\frac{6}{12} + 1 + \frac{8}{12} + 1\frac{9}{12} = 3\frac{23}{12} = 4\frac{11}{12} \text{ cups of fluid}$$

$$\begin{array}{l} 24. \quad 2\frac{11}{12} \text{ km left to walk} \\ 1\frac{1}{4} = 1\frac{3}{12} \\ 1\frac{1}{3} = 1\frac{4}{12} \\ 1\frac{1}{2} = 1\frac{6}{12} \\ \hline + 1 = 1 \\ 4\frac{13}{12} = 5\frac{1}{12} \\ 8 - 5\frac{1}{12} = 7\frac{12}{12} - 5\frac{1}{12} = 2\frac{11}{12} \text{ km left to walk} \end{array}$$

$$\begin{array}{l} 25. \quad 62\frac{1}{6} \text{ apples eaten} \\ 24\frac{1}{2} = 24\frac{3}{6} \\ + 37\frac{2}{3} = 37\frac{4}{6} \\ \hline 61\frac{7}{6} = 62\frac{1}{6} \text{ apples eaten} \end{array}$$

### REVIEW SET 1-3

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

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

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

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

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

$$= \frac{\overset{2}{4}}{\underset{3}{6}} \times \frac{9}{2} = \frac{\overset{1}{2}}{\underset{1}{3}} \times \frac{\overset{3}{9}}{\underset{1}{2}} = 3$$

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

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

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

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

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

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

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

$$10. 2\frac{1}{3} \times 4\frac{2}{12} = \frac{7}{3} \times \frac{50}{36} = \frac{350}{36} = 9\frac{26}{36} = 9\frac{13}{18}$$

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

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

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

$$14. \frac{1}{7} \div \frac{8}{10} = \frac{1}{7} \times \frac{10}{8} = \frac{10}{56} = \frac{5}{28}$$

$$15. \frac{1}{33} \div \frac{1}{3} = \frac{1}{33} \times \frac{3}{1} = \frac{1}{11}$$

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

$$17. \frac{1}{60} \div \frac{1}{2} = \frac{1}{60} \times \frac{2}{1} = \frac{1}{30}$$

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

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

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

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

$$x = \frac{3}{4} \times 80$$

$$x = 60 \text{ calories}$$

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

$$x = 9\frac{1}{3} \times 60 = \frac{28}{3} \times 60 = 560$$

$$x = 560 \text{ seconds}$$

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

$$30 \text{ tablets} = \frac{30}{1\frac{1}{2}} = \frac{30}{1} \div \frac{3}{2} = \frac{30}{1} \times \frac{2}{3} = \frac{60}{3} = 20 \text{ doses}$$

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

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

$$25. \frac{1}{3} \text{ full means the patient drank } \frac{2}{3} \text{ pitcher; therefore calculate } \frac{2}{3} \text{ of } 1275 \text{ mL}$$

$$\frac{2}{3} \times \frac{1275}{1} = \frac{2550}{3} = 850 \text{ mL}$$



# REVIEW SET 1-4

1. **0.2; two tenths**

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

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

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

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

$$\begin{array}{r} 0.015 \\ 200 \overline{)3.000} \\ \underline{200} \phantom{00} \\ 1000 \\ \underline{1000} \\ 0 \end{array}$$

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

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

8. **0.8; eight tenths**

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

9.  $250\frac{5}{10} = 250\frac{1}{2}$ ; **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.  $\frac{95}{100} = \frac{19}{20}$ ; **ninety-five hundredths**

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

$$\begin{array}{r} 0.75 \\ 4 \overline{)3.00} \\ \underline{28} \phantom{00} \\ 20 \\ \underline{20} \\ 0 \end{array}$$

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

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

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

$$200 \overline{)1.000} \quad 0.005$$

15.  $485\frac{75}{100} = 485\frac{3}{4}$ ; **485.75**

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

16. **zero point one seven micrograms**

17. **three point three seven five grams**

18.  $\frac{75}{100} = \mathbf{0.75}$

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

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 1-5

1. 0.150  
6.375  
2.050  
+ 17.000  
**25.575**

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

$$\begin{array}{r} 3. \quad 13.009 \\ - 0.700 \\ \hline 12.309 \end{array}$$

$$\begin{array}{r} 4. \quad 5.125 \\ 6.025 \\ + 0.150 \\ \hline 11.300 = 11.3 \end{array}$$

$$\begin{array}{r} 5. \quad 175.100 \\ + 0.099 \\ \hline 175.199 \end{array}$$

$$\begin{array}{r} 6. \quad 25.200 \\ - 0.193 \\ \hline 25.007 \end{array}$$

$$\begin{array}{r} 7. \quad 0.490 \\ - 0.053 \\ \hline 0.437 \end{array}$$

$$\begin{array}{r} 8. \quad \$10.10 \\ - 0.62 \\ \hline \$9.48 \end{array}$$

$$\begin{array}{r} 9. \quad \$19.00 \\ - 0.09 \\ \hline \$18.91 \end{array}$$

$$\begin{array}{r} 10. \quad \$5.05 \\ 0.17 \\ + 17.49 \\ \hline \$22.71 \end{array}$$

$$\begin{array}{r} 11. \quad 4.000 \\ 1.980 \\ 0.420 \\ + 0.003 \\ \hline 6.403 \end{array}$$

$$\begin{array}{r} 12. \quad 0.30 \\ - 0.03 \\ \hline 0.27 \end{array}$$

$$\begin{array}{r} 13. \quad 16.30 \\ - 12.15 \\ \hline 4.15 \end{array}$$

$$\begin{array}{r} 14. \quad 2.50 \\ - 0.99 \\ \hline 1.51 \end{array}$$

$$\begin{array}{r} 15. \quad 5.00 \\ 2.50 \\ 0.05 \\ 0.15 \\ + 2.55 \\ \hline 10.25 \end{array}$$

$$\begin{array}{r} 16. \quad 0.030 \\ 0.160 \\ + 2.327 \\ \hline 2.517 \end{array}$$

$$\begin{array}{r} 17. \quad 700.00 \\ - 325.65 \\ \hline 374.35 \end{array}$$

$$\begin{array}{r} 18. \quad 645.32 \\ - 40.90 \\ \hline 604.42 \end{array}$$

$$\begin{array}{r} 19. \quad 18.000 \\ 2.350 \\ 7.006 \\ + 0.093 \\ \hline 27.449 \end{array}$$

$$\begin{array}{r} 20. \quad 13.529 \\ + 10.090 \\ \hline 23.619 \end{array}$$

$$\begin{array}{r} 21. \quad 0.100 \\ 0.125 \\ 0.001 \\ 0.350 \\ + 0.121 \\ \hline 0.697 \text{ g} \end{array}$$

$$\begin{array}{r} 22. \quad 15.0 \quad 30 \\ + 7.5 \quad - 22.5 \\ \hline 22.5 \quad 7.5 \text{ mg of medication} \end{array}$$

$$\begin{array}{r} 23. \quad \$16\,709.43 \\ - 14\,651.37 \\ \hline \$2058.06 \text{ balance due} \end{array}$$

$$\begin{array}{r} 24. \quad 0.15 \\ \times 20 \\ \hline 3 \text{ kg} \end{array}$$

$$\begin{array}{rcl} 25. \text{ intake} & 1.5 & \\ & + 3.0 & \\ & \hline & 4.5 \text{ litres} & \\ \\ & \text{output} & 1.75 \\ & & + 0.50 \\ & & + 0.20 \\ & & \hline & 2.45 \text{ litres} & \\ \\ & \text{Balance} & 4.50 \\ & & - 2.45 \\ & & \hline & 2.05 \text{ litres} & \end{array}$$

#### Review Set 1-6

$$\begin{array}{r} 1. \quad 2.34 \\ \times 6.17 \\ \hline 1638 \\ 2340 \\ \hline 140400 \\ 14.4378 = \mathbf{14.44} \end{array}$$

$$\begin{array}{r} 2. \quad 0.314 \\ \times 7 \\ \hline 2.198 = 2.20 = \mathbf{2.2} \end{array}$$

$$\begin{array}{r} 3. \quad 1.71 \\ \times 25 \\ \hline 855 \\ 342 \\ \hline \mathbf{42.75} \end{array}$$

$$\begin{array}{r} 4. \quad 3.002 \\ \times 0.05 \\ \hline 0.15010 = \mathbf{0.15} \end{array}$$

$$\begin{array}{r} 5. \quad 75.1 \\ \times 1000.01 \\ \hline 751 \\ \hline 7510000 \\ 75100.751 = \mathbf{75\,100.75} \end{array}$$

$$\begin{array}{r} 6. \quad 16.03 \\ \times 2.05 \\ \hline 8015 \\ 320600 \\ \hline 32.86 \end{array}$$

$$\begin{array}{r} 7. \quad 55.50 \\ \times 0.05 \\ \hline 2.7750 = 2.78 \end{array}$$

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

$$9. \quad 15 \div 0.06 = 250$$

$$\begin{array}{r} 250 \\ 0.06 \overline{) 15.00} \\ \underline{12} \phantom{00} \\ 30 \phantom{00} \end{array}$$

$$10. \quad 25.3 \div 6.76 = 3.74$$

$$\begin{array}{r} 3.742 \\ 6.76 \overline{) 25.30.000} \\ \underline{2028} \phantom{000} \\ 5020 \phantom{00} \\ \underline{4732} \phantom{00} \\ 2880 \phantom{00} \\ \underline{2704} \phantom{00} \\ 1760 \phantom{00} \\ \underline{1352} \phantom{00} \\ 408 \phantom{00} \end{array}$$

$$11. \quad 0.02 \div 0.004 = 5$$

$$\begin{array}{r} 5.0 \\ 0.004 \overline{) 0.020.0} \\ \underline{20} \phantom{00} \\ 0 \phantom{00} \end{array}$$

$$12. \quad 45.5 \div 15.25 = 2.98$$

$$\begin{array}{r} 2.983 \\ 15.25 \overline{) 45.50.000} \\ \underline{3050} \phantom{000} \\ 15000 \phantom{00} \\ \underline{13725} \phantom{00} \\ 12750 \phantom{00} \\ \underline{12200} \phantom{00} \\ 5500 \phantom{00} \\ \underline{4575} \phantom{00} \\ 925 \phantom{00} \end{array}$$

13.  $73 \div 13.40 = 5.45$

$$\begin{array}{r} 5.447 \\ 13.40 \overline{) 73.00.000} \\ \underline{67.00} \phantom{00} \\ 6.000 \phantom{00} \\ \underline{53.60} \phantom{00} \\ 6.400 \phantom{00} \\ \underline{53.60} \phantom{00} \\ 10.400 \phantom{00} \\ \underline{93.80} \phantom{00} \\ 10.20 \phantom{00} \end{array}$$

14.  $16.36 \div 0.06 = 272.67$

$$\begin{array}{r} 272.666 \\ 0.06 \overline{) 16.36.000} \\ \underline{12} \phantom{00} \\ 43 \phantom{00} \\ \underline{42} \phantom{00} \\ 16 \phantom{00} \\ \underline{12} \phantom{00} \\ 40 \phantom{00} \\ \underline{36} \phantom{00} \\ 40 \phantom{00} \\ \underline{36} \phantom{00} \\ 40 \phantom{00} \\ \underline{36} \phantom{00} \\ 4 \phantom{00} \end{array}$$

15.  $0.375 \div 0.25 = 1.5$

$$\begin{array}{r} 1.5 \\ 0.25 \overline{) 0.37.5} \\ \underline{25} \phantom{00} \\ 125 \phantom{00} \\ \underline{125} \phantom{00} \\ 0 \end{array}$$

16.  $100.04 \div 0.002 = 50\,020$

$$\begin{array}{r} 50\,020 \\ 0.002 \overline{) 100.040.} \\ \underline{10} \phantom{000} \\ 0004 \phantom{00} \\ \underline{4} \phantom{00} \\ 00 \end{array}$$

17.  $562.5 \times 100 = 562.50 = 56\,250$

18.  $26 \times 10 = 26.0 = 260$

19.  $25 \div 1000 = .025 = 0.025$

20.  $32.005 \div 1000 = .032.005 = 0.032005$

21.  $23.25 \times 10 = 23.2.5 = 232.5$

22.  $717.717 \div 10 = 71.7.717 = 71.7717$

$$23. 83.16 \times 10 = \mathbf{831.6} = \mathbf{831.6}$$

$$24. 0.33 \times 100 = \mathbf{0.33} = \mathbf{33}$$

$$25. 14.106 \times 1000 = \mathbf{14.106} = \mathbf{14\ 106}$$

## Practice Problems

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

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

$$\begin{array}{r} 0.375 \\ 8 \overline{) 3.000} \\ \underline{24} \phantom{00} \\ 60 \phantom{0} \\ \underline{56} \phantom{0} \\ 40 \phantom{0} \\ \underline{40} \\ 0 \end{array}$$

$$3. \text{LCD} = \mathbf{21}$$

$$4. \text{LCD} = \mathbf{55}$$

$$5. \text{LCD} = \mathbf{18}$$

$$6. \text{LCD} = \mathbf{15}$$

$$\begin{array}{r} 7. \quad 1\frac{2}{3} = 1\frac{10}{15} \\ \quad + \frac{9}{5} = \frac{27}{15} \\ \hline \quad 1\frac{37}{15} = \mathbf{3\frac{7}{15}} \end{array}$$

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

$$\begin{array}{r} 9. \quad \frac{7}{9} = \frac{14}{18} \\ \quad - \frac{5}{18} = \frac{5}{18} \\ \hline \quad \frac{9}{18} = \mathbf{\frac{1}{2}} \end{array}$$

$$\begin{array}{r} 10. \quad 5\frac{1}{6} = 5\frac{4}{24} = 4\frac{28}{24} \\ \quad - 2\frac{7}{8} = 2\frac{21}{24} = 2\frac{21}{24} \\ \hline \quad \quad \quad = \mathbf{2\frac{7}{24}} \end{array}$$

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

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



$$13. 7\frac{1}{5} \div 1\frac{7}{10} = \frac{36}{5} \div \frac{17}{10} = \frac{36}{5} \times \frac{10}{17} = \frac{72}{17} = 4\frac{4}{17}$$

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

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

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

$$17. 13\frac{1}{3} = 13\frac{13}{39} = 12\frac{52}{39} \\ - 4\frac{6}{13} = 4\frac{18}{39} = 4\frac{18}{39} \\ = 8\frac{34}{39}$$

$$18. \frac{1}{10} + \frac{2}{3} = \frac{3}{30} + \frac{20}{30} \\ = \frac{23}{30}$$

$$19. 12\frac{1}{7} = 12\frac{5}{35} = 11\frac{40}{35} \\ - 7\frac{3}{5} = 7\frac{21}{35} = 7\frac{21}{35} \\ = 4\frac{19}{35}$$

$$20. \frac{\frac{7}{8}}{\frac{1}{3}} \div \frac{3\frac{1}{2}}{\frac{1}{3}} = \left(\frac{7}{8} \div \frac{1}{3}\right) \div \left(\frac{7}{2} \div \frac{1}{3}\right) \\ = \left(\frac{7}{8} \times \frac{3}{1}\right) \div \left(\frac{7}{2} \times \frac{3}{1}\right) \\ = \frac{\frac{21}{8}}{\frac{21}{2}} = \frac{1}{4}$$

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

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

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

24. 93.712

$$\begin{array}{r} 93.712 \\ -26.970 \\ \hline \end{array}$$

66.742 = **66.74**

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

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

42.9817 = 42.98

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

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

27. 360

$$\begin{array}{r} 360 \\ \times 0.53 \\ \hline \end{array}$$

1080

1800

190.80 = **190.8**

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

$$\begin{array}{r} 19.17 \\ 14 \overline{) 268.40} \\ \underline{14} \phantom{00} \\ 128 \phantom{0} \\ \underline{126} \phantom{0} \\ 24 \phantom{0} \\ \underline{14} \phantom{0} \\ 100 \phantom{0} \\ \underline{98} \phantom{0} \\ 2 \phantom{0} \end{array}$$

29.  $10.10 - 0.62 = \mathbf{9.48}$

$$\begin{array}{r} 10.10 \\ -0.62 \\ \hline 9.48 \end{array}$$

30.  $5 + 2.5 + 0.05 + 0.15 = \mathbf{7.7}$

$$\begin{array}{r} 5.00 \\ 2.50 \\ 0.05 \\ +0.15 \\ \hline 7.70 \end{array}$$

31.  $1.71 \times 25 = \mathbf{42.75}$

$$\begin{array}{r} 1.71 \\ \times 25 \\ \hline 855 \\ 342 \\ \hline 42.75 \end{array}$$

32.  $45 \div 0.15 = \mathbf{300}$

$$\begin{array}{r} 300 \\ 0.15 \overline{) 45.00} \\ \underline{45} \phantom{00} \end{array}$$

33.  $2974 \div 0.23 = \mathbf{12\,930.43}$

$$\begin{array}{r} 000 \\ 0.23 \overline{) 2974.0000} \\ \underline{23} \phantom{0000} \\ 67 \phantom{000} \\ \underline{46} \phantom{00} \\ 214 \phantom{0} \\ \underline{207} \phantom{0} \\ 70 \phantom{0} \\ \underline{69} \phantom{0} \\ 100 \phantom{0} \\ \underline{92} \phantom{0} \\ 80 \phantom{0} \\ \underline{69} \phantom{0} \\ 11 \end{array}$$

34.  $51.21 \div 0.016 = \mathbf{3200.63}$

$$\begin{array}{r} 0.016 \overline{) 51.210.000} \\ \underline{48} \phantom{000} \\ 32 \phantom{00} \\ \underline{32} \phantom{00} \\ 0100 \phantom{0} \\ \underline{96} \phantom{0} \\ 40 \phantom{0} \\ \underline{32} \phantom{0} \\ 80 \phantom{0} \\ \underline{64} \phantom{0} \\ 16 \end{array}$$

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

$$\begin{array}{r} 0.37 \overline{) 0.74} \\ \underline{74} \\ 0 \end{array}$$

36.  $1.5 + 146.73 + 1.9 + 0.832 = \mathbf{150.96}$

$$\begin{array}{r} 1.500 \\ 146.730 \\ 1.900 \\ \underline{0.832} \\ 150.962 = \mathbf{150.96} \end{array}$$

37.  $9.716 \times 1000 = 9.716 = \mathbf{9716}$

38.  $50.25 \div 100 = 50.25 = \mathbf{0.5025}$

39.  $0.25 \times 100 = \mathbf{25}$

40.  $5.75 \times 1000 = 5.750 = \mathbf{5750}$

41.  $0.25 \div 10 = 0.25 = \mathbf{0.025}$

42.  $11.525 \times 10 = \mathbf{115.25}$

43.  $3 \text{ tablets} \times 0.4 \text{ mg/tablet} = \mathbf{0.12 \text{ mg}}$

44.  $(1 \text{ assignment} - 1/2 \text{ assignment completed}) = 1/2 \text{ assignment remaining}$   
 $1/2 \text{ assignment remaining divided by 4 students} = 1/2 \times 1/4$   
 $= \mathbf{1/8 \text{ assignment remaining per student}}$

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

46.  $\$1837.5$

$$\begin{array}{r} \$35 \\ \times 40 \\ \hline \$1400 \end{array} \text{ earned for 40 hours}$$

Twice the hourly rate =  $\$35 \times 2 = \$70$

$$\begin{array}{r} \$70 \\ \times 6.25 \\ \hline \$437.5 \end{array}$$

= \$437.5 earned at twice the hourly rate for 6.25 hours

Total pay: \$1400

$$\begin{array}{r} \$1400 \\ +437.5 \\ \hline \$1837.5 \end{array}$$

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

$$\begin{array}{r} \$8.23 \\ 12 \overline{) \$98.76} \\ \underline{96} \phantom{00} \\ 27 \phantom{00} \\ \underline{24} \phantom{00} \\ 36 \phantom{00} \\ \underline{36} \phantom{00} \\ 0 \phantom{00} \end{array}$$

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

$$\begin{array}{r} \$81.25 \\ 12 \overline{) \$975.00} \\ \underline{96} \phantom{00} \\ 15 \phantom{00} \\ \underline{12} \phantom{00} \\ 30 \phantom{00} \\ \underline{24} \phantom{00} \\ 60 \phantom{00} \end{array}$$

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

$$\begin{array}{r} \$6.77 \\ 12 \overline{) \$81.25} \\ \underline{72} \phantom{00} \\ 92 \phantom{00} \\ \underline{84} \phantom{00} \\ 85 \phantom{00} \\ \underline{84} \phantom{00} \\ 1 \phantom{00} \end{array}$$

Savings per catheter when a case is purchased:

$$\begin{array}{r} \$8.23 \\ -6.77 \\ \hline \$1.46 \end{array}$$

= **\$1.46 savings per catheter**

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

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

**800 mL should be taken between the hours of 7:00 AM and 7:00 PM.**

$$\begin{array}{r} 50. \quad 6.65 \text{ kg} \\ \quad - 3.70 \text{ kg} \\ \hline \quad \mathbf{2.95 \text{ kg gained}} \end{array}$$