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

6. $2\frac{3}{4} = \frac{11}{4}$ $\quad \frac{(2 \times 4) + 3}{4} = \frac{11}{4}$

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

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

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

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

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

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

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

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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 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 on Day 2; 900 mL on Day 3; 1350 mL on 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. $\frac{36}{40} = \frac{9}{10}$ **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.

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REVIEW SET 1-2

1. $6\frac{3}{4} = 6\frac{15}{20}$
   $+\frac{3}{5} = \frac{12}{20}$
   $6\frac{27}{20} = \mathbf{7\frac{7}{20}}$

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

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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. $\frac{2}{3} = \frac{4}{6}$
$-\frac{1}{2} = \frac{3}{6}$
$\mathbf{\frac{1}{6}}$

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

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

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

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

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**

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

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

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

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

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

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

25. $\mathbf{62\frac{1}{6}}$ **apples eaten**

$24\frac{1}{2} = 24\frac{3}{6}$
$+37\frac{2}{3} = 37\frac{4}{6}$
$61\frac{7}{6} = 62\frac{1}{6}$ apples eaten

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REVIEW SET 1-3

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

24. $1\frac{1}{2}$ tablets per dose $\times$ 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 $\times$ 7 days $= 4\frac{1}{2} \times 7 = \frac{9}{2} \times 7 = \frac{63}{2} = \mathbf{31\frac{1}{2} \text{ tablets}}$

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

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

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REVIEW SET 1-4

1. **0.2; two tenths**

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

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

4. $\frac{6}{1000} = \frac{\mathbf{3}}{\mathbf{500}}$; **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. $1\frac{\mathbf{9}}{\mathbf{10}}$; **one and nine tenths**

7. $5\frac{\mathbf{1}}{\mathbf{10}}$; **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** $\frac{\mathbf{1}}{\mathbf{2}}$; **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. $\frac{95}{100} = \frac{\mathbf{19}}{\mathbf{20}}$; **ninety-five hundredths**

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

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

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

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

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

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

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

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

16. **zero point one seven micrograms**

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

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

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

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 1-5

1.
$$\begin{array}{r} 0.150 \\ 6.375 \\ 2.050 \\ +\ 17.000 \\ \hline \mathbf{25.575} \end{array}$$

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2. 7.517
   3.200
   0.160
   + 33.300
   44.177

3. 13.009
   − 0.700
   12.309

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. 0.490
   − 0.053
   0.437

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

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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 g

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

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23. $16 709.43
− 14 651.37
$2058.06 balance due

24. 0.15
× 20
3 kg

25. intake 1.5
+ 3.0
4.5 litres

output 1.75
+ 0.50
+ 0.20
2.45 litres

Balance 4.50
− 2.45
2.05 litres

Review Set 1-6

1. 2.34
× 6.17
1638
2340
140400
14.4378 = **14.44**

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**

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

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

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

9. 15 ÷ 0.06 = **250**

$$0.06.\overline{)\,15.00}\quad 2\,50$$
12
30

10. 25.3 ÷ 6.76 = **3.74**

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

11. 0.02 ÷ 0.004 = **5**

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

12. 45.5 ÷ 15.25 = **2.98**

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

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13. 73 ÷ 13.40 = **5.45**

```
      5.447
13.40.|73.00.000
      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. 26 × 10 = **26.0.** = **260**

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**

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

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 = $\mathbf{21}$

4. LCD = $\mathbf{55}$

5. LCD = $\mathbf{18}$

6. LCD = $\mathbf{15}$

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. $5\frac{1}{6} = 5\frac{4}{24} = 4\frac{28}{24}$
$-2\frac{7}{8} = 2\frac{21}{24} = 2\frac{21}{24}$
$= \mathbf{2\frac{7}{24}}$

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

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

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

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. $13\frac{1}{3} = 13\frac{13}{39} = 12\frac{52}{39}$

$-\ 4\frac{6}{13} = 4\frac{18}{39} = 4\frac{18}{39}$

$= \mathbf{8\frac{34}{39}}$

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

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

$= \frac{\overset{1}{\cancel{21}}}{\underset{4}{\cancel{8}}} \times \frac{\overset{1}{\cancel{2}}}{\underset{1}{\cancel{21}}} = \mathbf{\frac{1}{4}}$

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

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24. 93.712
−26.970
66.742 = **66.74**

25. 43.69 − 0.7083 = **42.98**

43.6900
− 0.7083
42.9817 = 42.98

26. 66.4 × 72.8 = **4833.92**

66.4
×72.8
5312
1328
4648
4833.92

27. 360
×0.53
1080
1800
190.80 = **190.8**

28. 268.4 ÷ 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 × 25 = **42.75**

1.71
× 25
855
342
42.75

32. 45 ÷ 0.15 = **300**

300
0.15 | 45.00
45

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

$$
\begin{array}{r}
12930.43 \\
0.23\overline{)2974.0000} \\
23 \\
\hline
67 \\
46 \\
\hline
214 \\
207 \\
\hline
70 \\
69 \\
\hline
100 \\
92 \\
\hline
80 \\
69 \\
\hline
11
\end{array}
$$

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

$$
\begin{array}{r}
3200.63 \\
0.016\overline{)51.210.000} \\
48 \\
\hline
32 \\
32 \\
\hline
0100 \\
96 \\
\hline
40 \\
32 \\
\hline
80 \\
64 \\
\hline
16
\end{array}
$$

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

$$
\begin{array}{r}
2 \\
0.37\overline{)0.74} \\
74 \\
\hline
0
\end{array}
$$

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

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

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

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43. 3 tablets × 0.4 mg/tablet = **0.12 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. $\frac{0.1 \text{ mg}}{1 \text{ tablet}}$ × 3.5 tablets = **0.35 mg**

46. **$1837.5**

$35
× 40
$1400 earned for 40 hours

Twice the hourly rate = $35 × 2 = $ 70

$70
× 6.25
$437.5

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

Total pay: $1400
+437.5
$1837.5

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**

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

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

50. 6.65 kg
<u>– 3.70 kg</u>
2.95 kg gained

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