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The *Full Solution Answer Key* provides answers to all *Mathematics 8* exercises. If needed, solutions are given. Each component is designated by color.

- teal – exercises from textbook
- gray – solutions
- black – answers

Students do not need to show every step or use the same format as shown in the Full Solution Answer Key. However, enough of the solution should be shown that the teacher can see where a mistake occurred if the answer is incorrect.

Unit 1

Lesson 1

Page 2

$$1. \quad 4\frac{2}{5} = 4\frac{4}{10}$$

$$\quad -1\frac{1}{2} = 1\frac{5}{10}$$

$$\quad \quad \quad 2\frac{9}{10}$$

$$2. \quad 4\frac{5}{8} = 4\frac{15}{24}$$

$$\quad -\frac{5}{6} = \frac{20}{24}$$

$$\quad \quad \quad 3\frac{19}{24}$$

$$3. \quad \frac{1}{2} = \frac{6}{12}$$

$$\quad \frac{2}{3} = \frac{8}{12}$$

$$\quad +\frac{3}{4} = \frac{9}{12}$$

$$\quad \quad \quad \frac{23}{12} = 1\frac{11}{12}$$

$$4. \quad 1\frac{7}{8} = 1\frac{7}{8}$$

$$\quad 3\frac{1}{4} = 3\frac{2}{8}$$

$$\quad +6\frac{1}{2} = 6\frac{4}{8}$$

$$\quad \quad \quad 10\frac{13}{8} = 11\frac{5}{8}$$

$$5. \quad 3\frac{3}{7} \times 2\frac{1}{2}$$

$$\quad \frac{12}{24} \times \frac{5}{2} = \frac{60}{7} = 8\frac{4}{7}$$

$$6. \quad 2\frac{3}{4} \times 2\frac{2}{3}$$

$$\quad \frac{11}{4} \times \frac{8}{3} = \frac{22}{3} = 7\frac{1}{3}$$

$$7. \quad 3\frac{6}{7} \div 1\frac{4}{5}$$

$$\quad \frac{27}{7} \div \frac{9}{5}$$

$$\quad \frac{27}{7} \times \frac{5}{9} = \frac{15}{7} = 2\frac{1}{7}$$

$$8. \quad 2\frac{1}{6} \div \frac{5}{9}$$

$$\quad \frac{13}{6} \div \frac{5}{9}$$

$$\quad \frac{13}{6} \times \frac{9}{5} = \frac{39}{10} = 3\frac{9}{10}$$

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9. not equivalent

10. equivalent

11. equivalent

12. not equivalent

$$13. \quad \frac{3}{5} = \frac{9}{15}$$

$$\quad +\frac{2}{3} = \frac{10}{15}$$

$$\quad \quad \quad \frac{19}{15} = 1\frac{4}{15}$$

$$14. \quad 7\frac{11}{12} = 7\frac{11}{12}$$

$$\quad +9\frac{5}{6} = 9\frac{10}{12}$$

$$\quad \quad \quad 16\frac{21}{12} = 17\frac{9}{12} = 17\frac{3}{4}$$

$$15. \quad 5 = 5\frac{3}{3}$$

$$\quad -\frac{2}{3} = \frac{2}{3}$$

$$\quad \quad \quad 4\frac{1}{3}$$

$$16. \quad 9 = 9\frac{9}{9}$$

$$\quad -7\frac{7}{9} = 7\frac{7}{9}$$

$$\quad \quad \quad 1\frac{2}{9}$$

$$17. \quad \frac{2}{5} \times \frac{1}{7} = \frac{2}{35}$$

$$18. \quad 3 \times 1\frac{2}{3}$$

$$\quad \frac{3}{1} \times \frac{5}{3} = \frac{5}{1} = 5$$

$$19. \quad \frac{7}{8} \div 2\frac{1}{2}$$

$$\quad \frac{7}{8} \div \frac{5}{2}$$

$$\quad \frac{7}{8} \times \frac{2}{5} = \frac{7}{20}$$

$$20. \quad \frac{5}{9} \div \frac{1}{2}$$

$$\quad \frac{5}{9} \times \frac{2}{1} = \frac{10}{9} = 1\frac{1}{9}$$

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$$21. \quad 0.\overline{83} \quad 83\frac{1}{3}\%$$

Unit 1 Lessons 1, 2

22. $0.75 = 75\%$

23. $0.\overline{6} = 66\frac{2}{3}\%$

24. $0.1\overline{6} = 16\frac{2}{3}\%$

25. $0.\overline{3} = 33\frac{1}{3}\%$

26. $0.25 = 25\%$

27. $0.5 = 50\%$

28. $0.875 = 87.5\% = 87\frac{1}{2}\%$

29. $0.625 = 62.5\% = 62\frac{1}{2}\%$

30. $0.375 = 37.5\% = 37\frac{1}{2}\%$

31. $0.125 = 12.5\% = 12\frac{1}{2}\%$

32. $\frac{3}{5} = \frac{6}{10} \quad \frac{2}{5} = \frac{4}{10}$

$$\frac{6}{10} + \frac{1}{10} = n$$

$$n = \frac{7}{10} \text{ of the lawn}$$

33. $9\frac{3}{4} \div \frac{3}{4} = n$

$$\frac{39}{4} \div \frac{3}{4} = n$$

$$\frac{13}{1} \times \frac{4}{3} = \frac{13}{1} = 13 \text{ pieces}$$

34. $\frac{1}{12} = \frac{1}{12}$

$$\frac{1}{6} = \frac{2}{12}$$

$$+ \frac{1}{12} = \frac{1}{12}$$

$$\frac{4}{12} = \frac{1}{3} \text{ of the summer}$$

35. $14\frac{6}{27} = 14\frac{2}{9}$

$$\begin{array}{r} 27 \overline{)384} \\ 27 \\ \hline 114 \\ 108 \\ \hline 6 \end{array}$$

36. $3.14 \overline{)12.56}$

37.
$$\begin{array}{r} 12 \\ 12 \\ \hline 124 \\ \times 0.075 \\ \hline 620 \\ 8680 \\ \hline 9300 = 9.3 \end{array}$$

38.
$$\begin{array}{r} 1263 \\ \$23.95 \\ \times \quad 7 \\ \hline \$167.65 \end{array}$$

39.
$$\begin{array}{r} 32 \\ 175 \\ \times 0.04 \\ \hline 7.00 = 7 \end{array}$$

40.
$$\begin{array}{r} 24 \\ 24 \\ \hline 25 \\ \times 0.88 \\ \hline 200 \\ 2000 \\ \hline 2200 = 22 \end{array}$$

Lesson 2

Page 5

1. $\sqrt{100} - \frac{28}{7} \cdot 2$

$$10 - \frac{28}{7} \cdot 2$$

$$10 - 4 \cdot 2$$

$$10 - 8$$

$$2$$

2. $32 - (6 + 2) \div 4$

$$32 - 8 \div 4$$

$$32 - 2$$

$$30$$

3. $23 - \frac{14}{2} + 6$

$$23 - 7 + 6$$

$$16 + 6$$

$$22$$

4. $2^3 \cdot 5 \cdot 3^2$

$$8 \cdot 5 \cdot 3^2$$

$$8 \cdot 5 \cdot 9$$

$$40 \cdot 9$$

$$360$$

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5. $2 + 2 + 3 + 4 + 4 + 5 + 5 + 5 + 5 + 6 = 36$

$$36 \div 9 = 4$$