Multiplying and Dividing Fractions.

Solve the following multiplication and division problems. Make sure to show your work, including all intermediate steps!

1. ½ x ¾

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

A: $\frac{3}{8}$

2. 4/5 x 6/7

$$\frac{4}{5} \times \frac{6}{7} = \frac{4 \times 6}{5 \times 7} = \frac{24}{35}$$

A: $\frac{24}{35}$

3. 2/3 x 5/8

$\frac{2}{3} \times \frac{5}{8} = \frac{2 \times 5}{3 \times 8} \rightarrow \frac{2 \times 5}{2 \times 4 \times 3} = \frac{5}{4 \times 3} = \frac{5}{12}$

A: $\frac{5}{12}$

4. 7/8 x 2/14

$\frac{7}{8} \times \frac{2}{14} = \frac{7 \times 2}{8 \times 14} \rightarrow \frac{7 \times 2}{7 \times 2 \times 8} = \frac{1}{8}$

5. 3/5 x 8/15

$\frac{3}{5} \times \frac{8}{15} = \frac{3 \times 8}{5 \times 15} \rightarrow \frac{3 \times 8}{3 \times 5 \times 5} = \frac{8}{5 \times 5} = \frac{8}{25}$

A: $\frac{8}{25}$

6. ¾ ÷ ½

$\frac{3}{4} \div \frac{1}{2} \rightarrow \frac{3}{4} \times \frac{2}{1} = \frac{3 \times 2}{4 \times 1} \rightarrow \frac{\cancel{2} \times 3}{\cancel{2} \times 2 \times 1} = \frac{3}{2 \times 1} = \frac{3}{2} = 1\frac{1}{2}$

A: $1\frac{1}{2}$

7. 4/5 ÷ 1/25

$\frac{4}{5} \div \frac{1}{25} \rightarrow \frac{4}{5} \times \frac{25}{1} = \frac{4 \times 25}{5 \times 1} \rightarrow \frac{5 \times \cancel{5} \times 4}{\cancel{5} \times 1} = \frac{5 \times 4}{1} = 20$

A: 20

8. 9/10 ÷ 2/5

$\frac{9}{10} \div \frac{2}{5} \rightarrow \frac{9}{10} \times \frac{5}{2} = \frac{9 \times 5}{10 \times 2} \rightarrow \frac{\cancel{5} \times 9}{\cancel{5} \times 2 \times 2} = \frac{9}{2 \times 2} = \frac{9}{4}$

A: $\frac{9}{4}$

9. 5/6 ÷ 2/3

$\frac{5}{6} \div \frac{2}{3} \rightarrow \frac{5}{6} \times \frac{3}{2} = \frac{5 \times 3}{6 \times 2} \rightarrow \frac{3 \times 5}{3 \times 2 \times 2} = \frac{5}{2 \times 2} = \frac{5}{4} = 1\frac{1}{4}$

A: $1\frac{1}{4}$

10. 11/20 ÷ 3/10

$\frac{11}{20} \div \frac{3}{10} \rightarrow \frac{11}{20} \times \frac{10}{3} = \frac{11 \times 10}{20 \times 3} \rightarrow \frac{10 \times 11}{10 \times 2 \times 3} = \frac{11}{2 \times 3} = \frac{11}{6} = 1\frac{5}{6}$

A: $1\frac{5}{6}$

11. 1 ½ x 2 2/3

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

A: 4

12. 3 ¾ x 4 1/5

$3\frac{3}{4} \times 4\frac{1}{5} \rightarrow \frac{15}{4} \times \frac{21}{5} = \frac{15 \times 21}{4 \times 5} \rightarrow \frac{5 \times 3 \times 21}{5 \times 4} = \frac{3 \times 21}{4} = \frac{63}{4} = 15\frac{3}{4}$

A: $15\frac{3}{4}$

13. 5 5/6 x 7 1/8

$5\frac{5}{6} \times 7\frac{1}{8} \rightarrow \frac{35}{6} \times \frac{57}{8} = \frac{35 \times 57}{6 \times 8} \rightarrow \frac{3 \times 19 \times 35}{3 \times 2 \times 8}$

$= \frac{19 \times 35}{2 \times 8} = \frac{665}{16} = 41\frac{9}{16}$

A: $41\frac{9}{16}$

14. 8 6/7 x 10 7/9

$8\frac{6}{7} \times 10\frac{7}{9} \rightarrow \frac{62}{7} \times \frac{97}{9} = \frac{62 \times 97}{7 \times 9} = \frac{6014}{63} = 95\frac{29}{63}$

A: $95\frac{29}{63}$

15. 15 x 3 5/6

$15 \times 3\frac{5}{6} = \frac{15}{1} \times \frac{23}{6} = \frac{15 \times 23}{1 \times 6} \rightarrow \frac{\cancel{3} \times 5 \times 23}{\cancel{3} \times 2 \times 1} = \frac{5 \times 23}{2 \times 1}$

$= \frac{115}{2} = 38\frac{1}{2}$ A: $38\frac{1}{2}$

16. 4 ¼ ÷ 2 ½

$4\frac{1}{4} \div 2\frac{1}{2} \rightarrow \frac{17}{4} \div \frac{5}{2} \rightarrow \frac{17}{4} \times \frac{2}{5} = \frac{17 \times 2}{4 \times 5} \rightarrow \frac{\cancel{2} \times 17}{\cancel{2} \times 2 \times 5}$

$= \frac{17}{2 \times 5} = \frac{17}{10} = 1\frac{7}{10}$ A: $1\frac{7}{10}$

17. 6 2/3 ÷ 2 1/5

$6\frac{2}{3} \div 2\frac{1}{5} \rightarrow \frac{20}{3} \div \frac{11}{5} \rightarrow \frac{20}{3} \times \frac{5}{11} = \frac{20 \times 5}{3 \times 11} = \frac{100}{33} = 3\frac{1}{33}$

A: $3\frac{1}{33}$

18. 5 7/8 ÷ 3 1/3

$5\frac{7}{8} \div 3\frac{1}{3} \rightarrow \frac{47}{8} \div \frac{10}{3} \rightarrow \frac{47}{8} \times \frac{3}{10} = \frac{47 \times 3}{8 \times 10} = \frac{141}{80} = 1\frac{61}{80}$

A: $1\frac{61}{80}$

19. 7 1/5 ÷ 2 1/6

$7\frac{1}{5} \div 2\frac{1}{6} = \frac{36}{5} \div \frac{13}{6} \rightarrow \frac{36}{5} \times \frac{6}{13} = \frac{36 \times 6}{5 \times 13} = \frac{216}{65}$

$= 3\frac{21}{65}$ A: $3\frac{21}{65}$

20. 20 ÷ 6 3/4

$20 \div 6\frac{3}{4} \rightarrow \frac{20}{1} \div \frac{27}{4} \rightarrow \frac{20}{1} \times \frac{4}{27} = \frac{20 \times 4}{1 \times 27} = \frac{80}{27}$

$= 3\frac{9}{27}$ A: $3\frac{9}{27}$

Submit your work as essay “Multiplying and Dividing Fractions.”