Complex Fractions and Rationalization Worksheet

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Solve the following complex fractions; simplify as much as possible.

1. $\dfrac{\frac{1}{2}}{\frac{1}{3}} =$
2. $\dfrac{\frac{3}{4}}{\frac{2}{5}} =$
3. $\dfrac{\frac{1}{3}+\frac{1}{2}}{\frac{2}{3}+\frac{2}{5}} =$
4. $\dfrac{\frac{2}{3}-\frac{1}{2}}{\frac{5}{6}+2} =$
5. $\dfrac{\frac{1}{2}+\frac{3}{4}}{\frac{2}{5}-\frac{1}{4}} =$
6. $\dfrac{\frac{3}{4}\times\frac{2}{3}}{\frac{2}{3}\times\frac{2}{5}} =$
7. $\dfrac{\frac{1}{2}\div\frac{3}{4}}{\frac{2}{5}\div\frac{1}{2}} =$
8. $\dfrac{\frac{2}{3}+\frac{1}{2}}{\frac{5}{6}-2} =$
9. $\dfrac{\frac{1}{2}-\frac{3}{4}}{\frac{2}{5}+\frac{1}{4}} =$

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

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

12. $\frac{3 - \frac{1}{2}}{4 + \frac{1}{2}} =$

13. $\frac{2 + \frac{1}{4}}{5 - \frac{1}{4}} =$

14. $\frac{\frac{1}{2} - \frac{2}{3}}{\frac{4}{5} + 2} =$

15. $\frac{\frac{3}{4} + \frac{1}{2}}{1 - \frac{2}{5}} =$

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

17. $\frac{2 - \frac{1}{3}}{4 + \frac{2}{3}} =$

18. $\frac{3 + \frac{2}{5}}{5 - \frac{2}{5}} =$

19. $\frac{\frac{1}{2} + \frac{2}{3}}{2 + \frac{3}{4}} =$

20. $\frac{\frac{3}{4} - \frac{1}{2}}{1 + \frac{1}{2}} =$

Simplify the following expressions by rationalising the denominator.

1. $\frac{1}{\sqrt{2}+1} =$
2. $\frac{2}{1-\sqrt{3}} =$
3. $\frac{3}{\sqrt{3}+2} =$
4. $\frac{4}{2-\sqrt{2}} =$
5. $\frac{1}{3+\sqrt{5}} =$
6. $\frac{2}{\sqrt{5}-3} =$
7. $\frac{3}{4+\sqrt{3}} =$
8. $\frac{4}{\sqrt{2}-1} =$
9. $\frac{5}{1+\sqrt{3}} =$
10. $\frac{6}{2-\sqrt{5}} =$
11. $\frac{7}{\sqrt{3}+2} =$
12. $\frac{8}{3-\sqrt{2}} =$
13. $\frac{1}{\sqrt{5}+4} =$
14. $\frac{2}{\sqrt{3}-1} =$
15. $\frac{3}{2+\sqrt{7}} =$
16. $\frac{4}{\sqrt{7}-2} =$
17. $\frac{5}{3+\sqrt{2}} =$
18. $\frac{6}{\sqrt{5}-1} =$
19. $\frac{7}{1+\sqrt{7}} =$
20. $\frac{8}{2-\sqrt{3}} =$