Advanced Order of Operations Problem Set 1

Simplify each problem to a single number or fraction (in simplest form).

1. $2^3 \times \sqrt{9} - 4 \div 2$

2. $\frac{3}{4} + \frac{2}{5} - \frac{1}{2} \times \frac{3}{7}$

3. $\sqrt{16} \times (3 - \frac{1}{2}) + 5$

4. $10 - \left(\frac{4}{5} \times \frac{3}{2} + 1\right) \div \left(\frac{2}{3} - \frac{1}{4}\right)$

5. $\frac{1}{3} \times \left(\frac{3}{4} + \frac{1}{2}\right)^2 - \frac{2}{5}$

6. $\left(\frac{4}{9} \div \frac{1}{2}\right) \times \left(3 + \frac{5}{8}\right) - 2$

7. $5 - \left(\frac{1}{2} \times \sqrt{25} - \frac{3}{4}\right) \div \left(\frac{7}{8} - \frac{2}{3}\right)$

8. $\left(\frac{3}{5} - \frac{2}{3}\right) \times \frac{1}{4} + \left(\frac{7}{8} + \frac{1}{2}\right)$

9. $\frac{2^4+3^2}{5-2} \times \sqrt{16} - \frac{1}{2}$

10. $\sqrt{9} \times \left(\frac{5}{8} + \frac{1}{3}\right)^2 - \frac{4}{5}$

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11. $\frac{1}{2} \times \left(\frac{2}{3} - \frac{1}{4}\right) + \frac{3}{8} \div \left(\frac{5}{6} + \frac{1}{2}\right)$

12. $\left(\frac{2}{3} + \frac{4}{5}\right) \times \left(\frac{1}{2} + \frac{3}{4}\right) - \frac{5}{6}$

13. $\frac{3}{4} \times \left(\frac{2}{5} + \frac{1}{3}\right) - \frac{4}{7} \div \left(\frac{3}{8} - \frac{2}{9}\right)$

14. $\left(\frac{1}{2} + \frac{2}{3}\right) \times \frac{3}{4} - \left(\frac{5}{6} - \frac{1}{4}\right)$

15. $\frac{5}{6} - \frac{2}{3} + \left(\frac{1}{4} + \frac{3}{8}\right) \div \left(\frac{7}{8} - \frac{1}{2}\right)$

16. $\left(\frac{3}{5} - \frac{1}{3}\right) \times \left(\frac{1}{2} + \frac{5}{8}\right) - \frac{2}{7}$

17. $\frac{4}{5} - \left(\frac{3}{7} \times \frac{1}{2}\right) + \left(\frac{2}{3} + \frac{5}{8}\right) \div \frac{1}{4}$

18. $\frac{7}{9} - \frac{1}{2} \times \left(\frac{3}{4} - \frac{1}{3}\right) + \frac{2}{5}$

19. $\frac{2}{3} + \left(\frac{1}{2} \times \frac{5}{6} - \frac{2}{7}\right) \div \left(\frac{3}{8} - \frac{1}{5}\right)$

20. $\left(\frac{5}{6} + \frac{2}{3}\right) \times \frac{1}{2} - \left(\frac{4}{5} - \frac{1}{3}\right)$