

5.8 Order of Operations

MATHPOWER™ Eight, pp. 198-199

B	E	DM	AS
Brackets	Exponents	Divide and multiply in order from left to right.	Add and subtract in order from left to right.

Express all answers in lowest terms.

Complete the table.

	<i>a</i>	<i>b</i>	<i>a + b</i>	<i>a - b</i>	<i>a × b</i>	<i>a ÷ b</i>
1.	$\frac{3}{5}$	$\frac{1}{4}$				
2.	$\frac{7}{8}$	$\frac{2}{3}$				
3.	$1\frac{1}{6}$	$\frac{1}{2}$				
4.	$1\frac{3}{4}$	$1\frac{1}{3}$				
5.	$2\frac{1}{2}$	$1\frac{4}{5}$				

Underline the part of each question to be calculated first, then simplify each one.

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

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

Calculate.

10. $\frac{1}{3} \times \left(\frac{1}{4}\right)^2$ _____

11. $\left(\frac{1}{8} \times 1\frac{2}{3}\right)^2$ _____

12. $\left(6 \div \frac{1}{3}\right)^2$ _____

13. $\left(3\frac{4}{5} - 1\frac{1}{10}\right)^2$ _____

14. $\left(2\frac{1}{2} + 3\frac{3}{4}\right)^2$ _____

Simplify.

15. $\frac{5}{9} - \frac{1}{2} \times \frac{1}{4} + \frac{1}{3}$ _____

16. $\frac{1}{8} \times \frac{2}{3} + 4 \div 1\frac{1}{2}$ _____

17. $\frac{4}{5} \div \frac{5}{6} - \frac{1}{4} + \frac{2}{5}$ _____

18. $\frac{1}{3} + \frac{1}{3} \times \frac{5}{6} \div \frac{1}{2}$ _____

Calculate.

19. $\frac{1}{3}\left(\frac{1}{4} + \frac{7}{8}\right)$ _____

20. $6\frac{3}{4} \div \left(3\frac{2}{3} - 1\frac{1}{6}\right)$ _____

21. $\frac{7}{8} + 2\frac{3}{4} \div 3\frac{1}{2}$ _____

22. $2\frac{3}{4} + \frac{3}{5} \times 1\frac{1}{4}$ _____

23. $2\frac{3}{5} \times 1\frac{1}{2} + \frac{2}{3}$ _____

24. $7\frac{1}{4} - 3\frac{1}{5} \times 1\frac{1}{4}$ _____

Insert a pair of brackets to make each statement true.

25. $\frac{1}{2} + \frac{2}{3} - \frac{1}{4} \times \frac{2}{5} \div \frac{1}{6} = 6\frac{2}{5}$

26. $\frac{1}{2} + \frac{2}{3} - \frac{1}{4} \times \frac{2}{5} \div \frac{1}{6} = \frac{17}{30}$

27. $\frac{1}{2} + \frac{2}{3} - \frac{1}{4} \times \frac{2}{5} \div \frac{1}{6} = 3\frac{9}{10}$