Order of Operations with Rational Numbers Part 2

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Mathematics 9
Rational Numbers
Order of Operations with Rational Numbers Part 2

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A. <u>Order of Operations with Rational Numbers</u>

Remember to follow BEDMAS rules when solving order of operations with rational numbers. It is generally easiest if you change the Mixed Numbers into Improper Fractions before beginning your calculations. Your final answer may still need to be reduced to lowest terms.

$$\frac{1}{2} \times \left(2\frac{1}{3} + \frac{1}{2} \right)$$

$$\frac{7^{\times 2}}{3^{\times 2}} + \frac{1^{\times 3}}{2^{\times 3}}$$

$$\frac{14}{6} + \frac{3}{6}$$

$$\frac{1}{2} \xrightarrow{} \frac{17}{6}$$
$$\times \xrightarrow{}$$

$$= \boxed{\frac{17}{12}} \ \alpha \ \boxed{1\frac{5}{12}}$$

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

$$\frac{3}{2} \times \frac{2}{5} \qquad -\frac{5}{4} \div \frac{1}{2}$$
$$\frac{}{1} \qquad\qquad -\frac{5}{4} \times \frac{2}{1}$$

$$\frac{3^{\times 2}}{5^{\times 2}} + \frac{-5^{\times 5}}{2^{\times 5}}$$

$$\frac{6}{10} + \frac{-25}{10}$$

$$= \boxed{-\frac{19}{10} \ \sim \ -1\frac{9}{10}}$$

$$1\frac{2}{3} - \left(-\frac{\cancel{15}^{3 \to 1}}{\cancel{16}_{4 \to 1}} \times \frac{\cancel{4}}{\cancel{5}}\right) \div 2\frac{1}{2}$$

$$\frac{5}{3} - \frac{3}{4} \div \frac{5}{2}$$

$$\frac{3}{\cancel{4}_2} \times \frac{\cancel{2}^1}{5}$$

$$\frac{5^{\times 10}}{3^{\times 10}} - \frac{3^{\times 3}}{10^{\times 3}}$$

$$\frac{50}{30} - \frac{9}{30}$$

$$\frac{50}{30} + \frac{-9}{30}$$

$$\boxed{\frac{41}{30} \quad \text{or} \quad 1\frac{11}{30}}$$

$$\left(-\frac{3}{4} - 1\frac{1}{2}\right) \times \left(1\frac{3}{4} - 2\frac{1}{2}\right)$$

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

$$\frac{-3}{4} + \frac{-6}{4} \qquad \frac{7}{4} + \frac{-10}{4}$$

$$\frac{-9}{4} \quad \xrightarrow{\times} \quad -\frac{3}{4}$$

$$= \boxed{\frac{27}{16} \quad \text{or} \quad 1\frac{11}{16}}$$

Assignment : Order of Operations with Rational Numbers Assignment

Order of Operations with Rational Numbers Part 2

1. $\dfrac{1}{8} + \left(\dfrac{1}{2} \times \dfrac{1}{4} \right)$

2. $\dfrac{1}{3} - \dfrac{1}{2} \times \dfrac{1}{4}$

3. $1\dfrac{1}{4} \div \left(-\dfrac{1}{2} \right) + \dfrac{3}{4}$

4. $\dfrac{1}{2} \div \left(1\dfrac{1}{3} + 1\dfrac{1}{6} \right)$

5. $\left(1\dfrac{2}{3} + 2\dfrac{2}{3} \right) \div \dfrac{1}{6}$

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

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

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

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

10. $2\frac{1}{8} - \left(1\frac{1}{2} - 2\frac{1}{4}\right) \times \frac{1}{2}$

Answers

1) $\dfrac{1}{4}$

2) $\dfrac{5}{24}$

3) $-\dfrac{7}{4}$

4) $\dfrac{1}{5}$

5) 26

6) $-\dfrac{13}{12}$

7) $\dfrac{7}{16}$

8) 6

9) $-\dfrac{8}{15}$

10) $\dfrac{5}{2}$