Order of Operations with Rational Numbers

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Mathematics 9
Rational Numbers
Order of Operations with Rational Numbers

A. Order of Operations

Remember from Elementary School that when you are working on a question that requires more than one operation that we must remember to follow BEDMAS rules.

B E D M A S
BRACKETS EXPONENTS DIVIDE MULTIPLY ADD SUBTRACT

1) $4-(7-3)\times 2$

$4-4\times 2$

$4-8$

$=\boxed{-4}$

2) $\dfrac{4^2+2^3}{2} = \dfrac{16+8}{2}$

$= \dfrac{24}{2} = \boxed{12}$

B. Order of Operations with Rational Numbers

The same set of rules can be applied to rational number questions. Remember that your final answer still needs to be reduced to lowest terms.

$\dfrac{1}{4}\times\left(\dfrac{1^{\times 2}}{3_{\times 2}}+\dfrac{1}{2_{\times 3}}\right)^{3}$

$\dfrac{2}{6}+\dfrac{3}{6}$

$\dfrac{1}{4}\times\dfrac{5}{6}$

$=\boxed{\dfrac{5}{24}}$

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

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

$$\frac{1}{5}+\frac{-1}{2}$$

$$\frac{2}{10}+\frac{-5}{10}=\boxed{\frac{-3}{10}}$$

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

$$\frac{2}{3}-\frac{3}{4}\div\frac{1}{2}$$

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

$$\frac{2}{3}-\frac{3}{2}=\frac{4}{6}-\frac{9}{6}=\frac{4}{6}+\frac{-9}{6}=\boxed{\frac{-5}{6}}$$

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

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

$$-\frac{7}{8}\times\frac{1}{4}$$

$$=\boxed{\frac{-7}{32}}$$

Assignment : Order of Operations with Rational Numbers Assignment

Name:_____

Order of Operations with Rational Numbers

1. $\frac{1}{8}+\frac{1}{2}\times\frac{1}{4}$

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

3. $\frac{5}{16}\div\frac{-5}{12}-\frac{-1}{4}$

4. $\frac{-1}{2}-\frac{-1}{3}+\frac{1}{6}$

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

6. $\frac{-1}{8}\div\frac{1}{2}+\frac{1}{4}\times\frac{2}{3}$

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

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

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

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

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

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

Answers

1) $\frac{1}{4}$

2) $\frac{5}{32}$

3) $-\frac{1}{2}$

4) 0

5) 4

6) $-\frac{1}{12}$

7) $\frac{1}{48}$

8) 5

9) $\frac{4}{3}$

10) $\frac{11}{16}$

11) $-\frac{1}{2}$

12) $\frac{7}{8}$