

Order of Operations with Fractions

- Turn all mixed numbers into improper fractions.
- Change division to multiplication and reciprocate the fraction that follows immediately after the new multiplication symbol.
- If a fraction is negative, move the negative symbol in front of the numerator.
- Follow BEDMAS rules, remembering that brackets have different purpose.

Practice:

<p>1 LVL</p>	$\frac{4}{5} - \frac{3}{10} \div \frac{2}{15} =$ $= \frac{4}{5} - \frac{3}{10} \times \frac{15}{2}$ $= \frac{4}{5} - \frac{3}{2} \times \frac{3}{2}$ $= \frac{4}{5} - \frac{9}{4}$ $= \frac{4 \times 4}{5 \times 4} - \frac{9 \times 5}{4 \times 5}$ $= \frac{16}{20} - \frac{45}{20}$ $= -\frac{29}{20}$ $= \boxed{1 \frac{9}{20}}$ <p>Common denominator LCM (4, 5) = 20</p> <p>or $\frac{16 - 45}{20}$</p>
<p>2 LVL</p>	$-3 \frac{1}{2} \times \frac{5}{14} - 6 \frac{3}{4} =$ $= -\frac{32}{4}$ $= \boxed{-8}$ $= -\frac{1}{2} \times \frac{5}{2} - \frac{27}{4}$ $= -\frac{5}{4} - \frac{27}{4}$ $= \frac{-5 - 27}{4}$

3

LVL

$$-\frac{3}{16} \times \left(\frac{-3}{14} + \frac{5}{42} \right) \div \frac{-3}{5} =$$

$$= -\frac{3}{16} \times \left(\frac{-3 \times 3}{14 \times 3} + \frac{5}{42} \right) \div \frac{-3}{5}$$

$$= -\frac{3}{16} \times \left(\frac{-9+5}{42} \right) \div \frac{-3}{5}$$

$$= -\frac{3}{16} \times \frac{-4}{42} \div \frac{-3}{5}$$

$$= -\frac{3}{8} \times \frac{-1}{21} \times \frac{-5}{3}$$

$$= \frac{-1}{8} \times \frac{-1}{7} \times \frac{-5}{3}$$

$$= \frac{(-1)(-1)(-5)}{8 \times 7 \times 3}$$

$$= \boxed{\frac{-5}{168}}$$

4

LVL

$$2\frac{5}{6} - 4\frac{2}{5} \times 3 \div 2\frac{4}{7} \div \left(-4\frac{2}{3} \right) =$$

$$= \frac{17}{6} - \frac{22}{5} \times \frac{3}{1} \div \frac{18}{7} \div \left(\frac{-14}{3} \right)$$

$$= \frac{17}{6} - \frac{22}{5} \times \frac{3}{1} \times \frac{7}{18} \times \frac{-3}{14}$$

$$= \frac{17}{6} - \frac{11}{5} \times \frac{1}{1} \times \frac{1}{1} \times \frac{-1}{2}$$

$$= \frac{17}{6} - \frac{(11)(1)(1)(-1)}{(5)(1)(1)(2)}$$

$$= \frac{17 \times 5}{6 \times 5} - \frac{-11 \times 3}{10 \times 3}$$

$$= \frac{85 - (-33)}{30}$$

$$= \frac{118}{30}$$

$$= \frac{59}{15}$$

$$= \boxed{3\frac{14}{15}}$$