

Foundations for College Algebra
Spring 2016
Practice Fraction and Order of Operation Problems

Note: Do all steps following the *Order of Operation* precisely!

$$1. \left(-\frac{5}{4}\right)^2 + \left[\left(4 - \frac{7}{5}\right) + 2\right]^2 - 5 + 3\left(\frac{1}{6} + \frac{2}{9}\right)$$

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

$$3. -4 + \frac{1}{4}\left|\frac{1}{2} - \frac{1}{8}\right| \div 4 - \frac{1}{4} + 4 * \frac{1}{8}$$

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

$$5. \frac{\frac{3}{7} - \frac{5}{y}}{-\frac{6}{y^2}}$$

Practice Fractions and Order of Operations Problems Key

$$\#1) \left(-\frac{5}{4}\right)^2 + \left[\left(4 - \frac{7}{5}\right) + 2\right]^2 - 5 + 3\left(\frac{1}{6} + \frac{2}{9}\right)$$

$$\left(-\frac{5}{4}\right)^2 + \left[\left(\frac{20-7}{5}\right) + 2\right]^2 - 5 + 3\left(\frac{3+4}{18}\right)$$

$$\left(-\frac{5}{4}\right)^2 + \left[\frac{13}{5} + \frac{2}{1}\right]^2 - 5 + 3\left(\frac{7}{18}\right)$$

$$\left(-\frac{5}{4}\right)^2 + \left[\frac{13+10}{5}\right]^2 - 5 + 3\left(\frac{7}{18}\right)$$

$$\left(-\frac{5}{4}\right)^2 + \left[\frac{23}{5}\right]^2 - 5 + 3\left(\frac{7}{18}\right)$$

$$\frac{25}{16} + \frac{529}{25} - 5 + 3\left(\frac{7}{18}\right)$$

$$\frac{25}{16} + \frac{529}{25} - 5 + \frac{7}{6}$$

$$\frac{625 + 8464}{400} - 5 + \frac{7}{6}$$

$$\frac{9089}{400} - \frac{5}{1} + \frac{7}{6}$$

$$\frac{9089 - 2000}{400}$$

$$\frac{7089}{400} + \frac{7}{6}$$

$$\frac{21267 + 1400}{1200} = \frac{22667}{400}$$

#2)

$$\frac{5}{3} + \frac{1}{6x}$$

$$\frac{2}{5x} - \frac{1}{4}$$

$$\frac{10x + 1}{6x} \quad K$$

$$\frac{8 - 5x}{20x} \quad F$$

$$\frac{10x + 1}{\frac{6x}{3}} \cdot \frac{\overset{10}{20x}}{8 - 5x}$$

$$\frac{(10x + 1) 10}{3(8 - 5x)} \quad \text{or}$$

$$\frac{100x + 10}{24 - 15x}$$

$$\#3) -4 + \frac{1}{4} \left| \frac{1}{2} - \frac{1}{8} \right| \div 4 - \frac{1}{4} + 4 * \frac{1}{8}$$

$$-4 + \frac{1}{4} \left| \frac{4-1}{8} \right| \div 4 - \frac{1}{4} + 4 * \frac{1}{8}$$

$$-4 + \frac{1}{4} \left| \frac{3}{8} \right| \div 4 - \frac{1}{4} + 4 * \frac{1}{8}$$

$$-4 + \frac{1}{4} = \frac{3}{8} \div 4 - \frac{1}{4} + 4 * \frac{1}{8}$$

$$-4 + \frac{3}{32} \div 4 - \frac{1}{4} + 4 * \frac{1}{8}$$

$$-4 + \frac{3}{32} \circ \frac{1}{4} - \frac{1}{4} + 4 * \frac{1}{8}$$

$$-4 + \frac{3}{128} - \frac{1}{4} + 4 * \frac{1}{8}$$

$$-4 + \frac{3}{128} - \frac{1}{4} + \frac{1}{2}$$

$$\frac{-512 + 3}{128} - \frac{1}{4} + \frac{1}{2}$$

$$\frac{-509}{128} - \frac{1}{4} + \frac{1}{2}$$

$$\frac{-509 - 32}{128} + \frac{1}{2}$$

$$\frac{-541}{128} + \frac{1}{2}$$

$$\frac{-541 + 64}{128}$$

$$\frac{-477}{128}$$

$$\#4) \frac{2}{7} - 3 + \frac{1}{2}$$

$$-\frac{1}{5} + 3 - \frac{1}{2}$$

$$\frac{2-21}{7} + \frac{1}{2}$$

$$\frac{-1+15}{5} - \frac{1}{2}$$

$$\frac{19}{7} + \frac{1}{2}$$

$$\frac{14}{5} - \frac{1}{2}$$

$$\frac{-38+7}{14}$$

$$\frac{28-5}{10}$$

$$\frac{31}{14}$$

$$\frac{23}{10}$$

$$-\frac{31}{14} \cdot \frac{10^5}{23}$$

$$\frac{155}{161}$$

$$\#5) \quad \frac{3}{7} - \frac{5}{y}$$

$$- \frac{6}{y^2}$$

$$\frac{3y - 35}{7y}$$

$$- \frac{6}{y^2}$$

$$\frac{3y - 35}{7y} \cdot \frac{y^2}{6}$$

$$\frac{3y - 35}{7} \cdot \frac{y}{6}$$

| |
|-------------------------|
| $\frac{(3y - 35)y}{42}$ |
|-------------------------|

or

$$\frac{3y^2 - 35y}{42}$$