1.6 Order of Operations with Fractions (work period)

recall :   # BEDMAS

Ex. 1   Evaluate each of the following.

Leave your final answer in lowest terms.

— means multiply

a) $\dfrac{1}{2} - 3\left(\dfrac{1}{3} + \dfrac{2}{1\cdot 3}\right)3$

$= \dfrac{1}{2} - 3\left(\dfrac{1}{3} + \dfrac{6}{3}\right)$

$= \dfrac{1}{2} - 3\left(\dfrac{7}{3}\right)$

$= \dfrac{1}{2} - \dfrac{7\cdot 2}{1\cdot 2}$

$= \dfrac{1}{2} - \dfrac{14}{2}$

$= -\dfrac{13}{2}$ or

$= -6\dfrac{1}{2}$

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

$= \dfrac{3}{4} + \dfrac{4}{9} \times \dfrac{1}{2}$

$= \dfrac{3\cdot 9}{4\cdot 9} + \dfrac{2\cdot 4}{9\cdot 4}$

$= \dfrac{27}{36} + \dfrac{8}{36}$

$= \dfrac{35}{36}$

c) $\dfrac{5\cdot\dfrac{1}{3} + \dfrac{2}{5}\cdot 3}{5\cdot\dfrac{3}{5}\cdot 3}$ → or $\left(\dfrac{1}{3} + \dfrac{2}{5}\right) \div \dfrac{3}{5}$

$= \dfrac{\dfrac{5}{15} + \dfrac{6}{15}}{\dfrac{3}{5}}$

$= \dfrac{\dfrac{11}{15}}{\dfrac{3}{5}}$

$= \dfrac{11}{15} \div \dfrac{3}{5}$

$= \dfrac{11}{15} \times \dfrac{5}{3}$

$= \dfrac{11}{9}$ or $= 1\dfrac{2}{9}$

d) $\dfrac{\dfrac{2}{3} \times \dfrac{1}{2}}{\dfrac{5}{2} - \dfrac{4}{3}}$

$= \left(\dfrac{2}{3} \times \dfrac{1}{2}\right) \div \left(\dfrac{5\cdot 3}{2\cdot 3} - \dfrac{4\cdot 2}{3\cdot 2}\right)$

$= \dfrac{1}{3} \div \left(\dfrac{15}{6} - \dfrac{8}{6}\right)$

$= \dfrac{1}{3} \div \left(\dfrac{7}{6}\right)$

$= \dfrac{1}{3} \times \dfrac{6}{7}$

$= \dfrac{2}{7}$

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