

Sept. 11, 2017

Warmup

$$\frac{1}{3} + \left(\frac{2}{5}\right)^2 \times \frac{1}{8} \div 4\frac{1}{2} + 2$$

$$= \frac{1}{3} + \frac{\cancel{4}}{25} \times \frac{1}{\cancel{8}} \div 4\frac{1}{2} + 2$$

$$= \frac{1}{3} + \frac{4}{200} \div \frac{9}{2} + 2$$

$$= \frac{1}{3} + \frac{1}{50} \div \frac{9}{2} + 2$$

$$= \frac{1}{3} + \frac{1}{50} \times \frac{2}{9} + 2$$

$$= \frac{1}{3} + \frac{2}{450} + 2$$

$$\begin{array}{l} \times 75 \\ = \\ \times 75 \end{array} \frac{1}{3} + \frac{1}{225} + 2 \begin{array}{l} \times 225 \\ \times 225 \end{array}$$

$$= \frac{75}{225} + \frac{1}{225} + \frac{450}{225}$$

$$= \boxed{\frac{526}{225}}$$

Test #1: Wednesday,
Sept. 13, 2017

① Integers

- adding and subtracting
- multiply and divide

② Fractions

③ BEDMAS

Integers

$$a) 3 + (-4) - (-5) + (-6)$$

$$= 3 - 4 + 5 - 6$$

$$= -1 + 5 - 6$$

$$= 4 - 6 = \boxed{-2}$$

$$b) (-3) \times (-4) \div (-2)^2$$

$$= (-3) \times (-4) \div 4$$

$$= +12 \div 4$$

$$= \boxed{3}$$

Fractions

$$c) \frac{1}{3} \times 4 + \frac{1}{4} \times 3 - \frac{1}{2} \times 6 + \frac{1}{6} \times 2$$

$$= \frac{4}{12} + \frac{3}{12} - \frac{6}{12} + \frac{2}{12}$$

$$= \boxed{\frac{3}{12}} = \boxed{\frac{1}{4}}$$

$$d) \begin{pmatrix} -2 \\ 3 \end{pmatrix} = \begin{pmatrix} 4 \\ 5 \end{pmatrix} \times \begin{pmatrix} -3 \\ 4 \end{pmatrix}$$

$$= \frac{\cancel{-2}}{\cancel{3}} \times \frac{5}{\cancel{24}} \times \frac{\cancel{-3}}{4}$$

$$= \frac{30}{48} = \frac{15}{24} = \boxed{\frac{5}{8}}$$

Combination

$$\left(\frac{140}{260} + \frac{35}{40} \right)^2 \times \left(\frac{1}{2} + \frac{400}{600} \right)^2$$

$$= \left(\frac{7}{10} + \frac{7}{8} \right)^2 \times \left(\frac{1}{2} + \frac{2}{3} \right)^2$$

x4 x5

$$= \left(\frac{28}{40} + \frac{35}{40} \right)^2 \times \left(\frac{3}{6} + \frac{4}{6} \right)^2$$

$$= \left(\frac{63}{40} \right)^2 \times \left(\frac{7}{6} \right)^2$$

$$= \frac{3969}{1600} \times \frac{49}{36}$$

$$= \boxed{\frac{194481}{57600}} \text{ boon}$$

$$A2) \left(\frac{1000}{2000} - \frac{800}{2400} \right)^3$$

$$= \left(\frac{1}{2} - \frac{1}{3} \right)^3$$

$$= \left(\frac{3}{6} - \frac{2}{6} \right)^3$$

$$= \left(\frac{1}{6} \right)^3$$

$$= \frac{1^3}{6^3} \text{ or } \frac{1 \times 1 \times 1}{6 \times 6 \times 6}$$

$$= \boxed{\frac{1}{216}}$$

$$\underline{A3} \quad \frac{1}{2} - \left(\frac{2}{3} \div \frac{2}{5} \right)^2 + 1$$

$$= \frac{1}{2} - \left(\frac{2}{3} \cdot \frac{5}{2} \right)^2 + 1$$

$$= \frac{1}{2} - \left(\frac{10}{6} \right)^2 + 1$$

$$= \frac{1}{2} - \left(\frac{5}{3} \right)^2 + 1$$

$$= \frac{1}{2} - \frac{25}{9} + 1$$

$$= \frac{9}{18} - \frac{50}{18} + \frac{18}{18}$$

$$= \boxed{\frac{-23}{18}}$$

A4)

$$\left(\frac{10}{15} \times \frac{3}{4}\right)^2 + \left(\frac{1}{2} \div \frac{3}{2}\right)^3$$

$$= \left(\frac{2}{3} \times \frac{3}{4}\right)^2 + \left(\frac{1}{2} \times \frac{2}{3}\right)^3$$

$$= \left(\frac{6}{12}\right)^2 + \left(\frac{2}{6}\right)^3$$

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

$$= \left(\frac{1}{4} \right) + \frac{1}{27}$$

$$= \frac{27}{108} + \frac{4}{108}$$

$$= \boxed{\frac{31}{108}}$$