EXERCISES ON ORDER OF OPERATIONS II

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Tolentino Tuition, Grade 5 *Mathematics*

4 *May* 2026

CONTENTS

NUMBER 'TRICKS'

The following 'tricks' may be helpful for our completion of **Exercise 1:**

1. $\left(\frac{a}{b}\right)^2$ can be rewritten as $\frac{a^2}{b^2}$ or $a^2 \div b^2$

2. $a(b+c)$ can be rewritten as $a \times (b+c)$

3. If two or more fractions have the same denominator, we can add or subtract them using their numerators:

   e.g. $\frac{1}{3} - \frac{7}{3} + \frac{5}{3} = \frac{1-7+5}{3} = \frac{-6+5}{3} = -\frac{1}{3}$

4. We can multiply any two fractions by multiplying their numerators and denominators separately:

   i.e. $\frac{a}{b} \times \frac{c}{d} = \frac{a \times c}{b \times d}$, e.g. $\frac{4}{5} \times \frac{3}{2} = \frac{4 \times 3}{5 \times 2} = \frac{12}{10} = \frac{6}{5}$

5. We can divide any two fractions by 'cross multiplication':

   i.e. $\frac{a}{b} \div \frac{c}{d} = \frac{a \times d}{b \times c}$, e.g. $\frac{4}{5} \div \frac{3}{2} = \frac{4 \times 2}{5 \times 3} = \frac{8}{15}$

6. We can rewrite fractions as decimals by dividing the numerator by the denominator (either by hand, or using a calculator):

   e.g. $\frac{1}{2} = 1 \div 2 =$ $2\overline{)1.0}$ $= 0.5$

7. We can rewrite decimals as fractions by observing *place value:*

   e.g. $1.25 = 1 + 0.25 = \frac{1}{1} + \frac{25}{100} = \frac{1}{1} + \frac{25 \div 25}{100 \div 25}$
   $= \frac{1}{1} + \frac{1}{4} = \frac{4}{4} + \frac{1}{4} = \frac{5}{4}$

EXERCISE 1

Please evaluate the following in the order BIDMAS, showing your working.

1. $\left(\frac{4}{5}\left(0.5+6.25\times\frac{2}{1}\right)-\frac{1}{5}\right)\div\frac{4}{7}$

2. $\left(\frac{2}{3}+\frac{1}{5}-\left(\frac{7}{8}\div 0.25\right)+3\right)-\left(\frac{1}{2}\right)^2$

3. $0.15\times\frac{5}{6}-\left(0.7-\frac{3}{10}+\left(\frac{3}{4}\right)^2\right)\div 1.24+\frac{1}{6}$

4. **Challenge**

$$\frac{\left((0.36\div 2+(0.25)^2)^2-\left(\frac{3}{4}\right)^3\times\left(1-\left(2.075\div\frac{12}{60}\right)\right)\right)}{2}$$