**Integers : Order of Operations**

1. Copy each question into your notebook and simplify completely. Show all your work neatly. Afterwards, record your answer in the space provided at the bottom of the page.

   a) \((-2) [-2^2 + (-1)]\)  
   b) \(-3 - (-4)(-2 - 1)\)  
   c) \((-2) (-5) - [(-2)^2 + 2]\) 

   d) \(-3 - 2 \{15 ÷ (-5) - (-2)\}\)  
   e) \(-2^2 - 3(-1)(-4)\)  
   f) \((-8)(-1) - 2[2^2 - 5(-1)]\) 

   g) \((-3)(-2)[-4 - (-2)]^2\)  
   h) \((-3)(-5)[1 - 2]\)  
   i) \((-3)(-4) - 4 + (-2)(9 - 11)\) 

   j) \((-3)^2 - [-3 - 2(-1)]\)  
   k) \(-15 ÷ 3 - 3[5(-2) - 2]\)  
   l) \((-4)^2 + (-2)^2 - (-3)(-4)\) 

   m) \(-30 ÷ (-5 - 1) - 2[-4^2 - (-6)]\)  
   n) \(16 + (-2)(-4) - (-4)^2\)  
   o) \(-5 + 3[-12 ÷ 3 - (-3)^2]\) 

   p) \(-6 + 3(-3 + 5) - 2\)  
   q) \(-16 ÷ (6 + 2) - 5^2\)  
   r) \((-4 - 1)^2 + (-3)(2^2 - 6)\) 

   s) \(\frac{-20 - 4}{-6 - 2} - 3^2(-2 - 2)\)  
   t) \(-6(-1^2 - 3) - 2(-4)(-3)\) 

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**Numeracy Skills : Order of Operations**

1. \((5 + 3) - 2 + 6[7 - (2)^2]\)  
   \(12 ÷ 6\) 

2. \((7 - 2) + 3[(2)^2 + (2)^3]\) - \((10 - 4) ÷ 2\) 

3. \(3 + 2(-4 + 2)^3 - (-1 - 3)^2 + (10 ÷ 5)\) 

4. \(9 - 4 \{2^3 - (2)^2\} ÷ 4 + 5(3) - 5(2)^2\) 

5. \(2 + 5(4^2 - 18)^2 - 9 ÷ \frac{6}{2}\)
Evaluating expressions with Rational Numbers

Use BEDMAS to evaluate each expression. Write your answer in lowest terms.

1. \(\frac{3}{4} \times \frac{5}{6} + \frac{1}{2} = \frac{15}{24} \times \frac{5}{6} + \frac{1}{2} = \frac{5}{8} + \frac{4}{8} = \frac{9}{8}\) or \(1\frac{1}{8}\)

2. \(\frac{2}{3} \times \left( \frac{1}{5} + \frac{1}{2} \right)\)

3. \(3 - \frac{5}{6} + \frac{1}{3}\)

4. \(\frac{1}{2} - \frac{1}{3} \times \frac{12}{5}\)

5. \(\frac{9}{10} \times 20 + \frac{1}{3}\)

6. \(-\frac{2}{3} \times \frac{1}{2} + (-2)\)

7. \(\frac{3}{2} + \left( -\frac{1}{6} \right) \times \frac{1}{3}\)

8. \(\frac{2}{3} \times \frac{5}{8} + \frac{2}{3} \times \left( -\frac{1}{8} \right)\)

9. \(\frac{2}{3} \times \left( -\frac{1}{8} \right) \times 3\)

10. \(\left( \frac{1}{2} + \frac{1}{3} \right) + \left( \frac{1}{4} + \frac{1}{3} \right)\)

11. \(\left( -\frac{4}{7} \right) + \left( -\frac{12}{7} \right) - \frac{1}{3}\)

12. \(\_\_\_\_\_\_\_\_\_\)
Rational Numbers Review

1. Express each rational number in lowest terms.
   a) $\frac{36}{24}$  
   b) $\frac{-72}{81}$  
   c) $\frac{35}{42}$  
   d) $\frac{162}{144}$  
   e) $\frac{-435}{885}$  
   f) $\frac{-78}{54}$  
   g) $\frac{-124}{-208}$  
   h) $\frac{-104}{-112}$

2. Evaluate. Show all your work.
   a) $\frac{-44}{36} \times \frac{15}{55}$  
   b) $\frac{5}{21} \div \frac{-9}{-20}$  
   c) $\frac{5}{27} - \frac{11}{36}$  
   d) $\frac{9}{14} + \left(\frac{2}{7}\right) \times \left(\frac{1}{-24}\right)$
   e) $\frac{7}{6} - \left(\frac{2}{3}\right) + \frac{1}{5}$  
   f) $\frac{24}{35} \times \frac{15}{10} \div \frac{16}{9}$  
   g) $\left(-\frac{1}{8}\right)^2 - \left(\frac{3}{4}\right)^3$  
   h) $\frac{-11}{15} + 2 \times \left(\frac{4}{5}\right)^2$
   i) $\frac{-7}{36} \times \frac{15}{56}$  
   j) $\frac{4}{21} \div \frac{-6}{-28}$  
   k) $\frac{5}{28} - \frac{11}{21}$  
   l) $\frac{7}{6} - \left(\frac{5}{4}\right) + \left(\frac{1}{3}\right)$
   m) $-\frac{13}{14} + \left(\frac{2}{7}\right) \times \left(\frac{1}{-40}\right)$
Solving Word Problems

Before simplifying any of these questions, you must first write an algebraic expression!

1. In 4 hours, the effect of the tide at seal port changed the water level by - 4.8 m. What was the average hourly change in water level?

2. Use rational number to write a number sentence for each question.
   a) A diver descends at a rate of 12.4 m/min. What was her depth after 2.5 min?
   b) The temperature drops about 10.5°C over a 6 hour period. What is the mean temperature change per hour, to the nearest tenth of a degree?

3. A tub contains 2 $\frac{1}{4}$ L of ice cream. It is shared equally among 5 people. How much will each person get?

4. A pizza costs $15.81. You pay for $\frac{1}{3}$ of the pizza. How much do you pay?

5. You find $\frac{1}{3}$ of a pizza in the fridge and eat one-half of it. What fraction of the whole pizza have you eaten?

6. Cindy went on a trip to Florida. She spent $\frac{1}{6}$ of her money on candy, $\frac{1}{3}$ on hotels and $\frac{3}{10}$ of her money on food and souvenirs. What fraction of her money did she spend?

7. Dave received $120 for his birthday and went on a shopping spree. He spent $\frac{2}{5}$ of his money on a new shirt and $\frac{1}{6}$ on mountain bike magazines. How much does he have left?

8. A pizza costs $21.50. Mindy and four of her friends buy the pizza and equally pay for it. Mindy gives the clerk $25.00 to pay for the pizza. How much change should each of them receive?

9. A gas tank has a capacity of 54 L. On a trip to Niagara Falls, one-half of a tank is used. If the gas tank was $\frac{7}{9}$ full at the start of the trip:
   a) what fraction of the gas remains after the trip?
   b) how much fuel was used?

10. Twelve friends purchased four pizzas. Each of these friends ate $\frac{2}{7}$ of a pizza. How much is left over?

11. Ms. Tenn-Yuk asks Johnny to organize the following numbers from greatest to least WITHOUT converting to decimals. However, Johnny needs some help with this task. Organize these numbers and explain to Johnny what you are doing.

\[ -\frac{2}{7}, -4, -\frac{3}{4}, 2, \frac{3}{7}, -1, \frac{4}{5} \]