Hi this is Sachin! I am a Student Success Coach and will be explaining some practice problems from the MA001 Algebra course. Today we will review an assigned problem from Unit 1. In the “Homework Assessment” you were asked to solve this problem:

\[
\frac{-13 - 2}{2 - (-1)^3 + (-6) - [-1 - (-3)]}
\]

We will use the “order of operations” principles to simplify this expression.

We will approach this problem as follows:

1. Simplify the top.
2. Simplify the bottom.
3. Divide the top by bottom.
4. Reduce the fraction.

**Step 1:** Simplify the top:

\[-13 - 2\]

This is an addition of two negative numbers, so when both number are negative, add them and attach the negative sign to the result.

\[-13 + (-2) = -15\]

Simplified top is \(-15\).

**Step 2:** Simplify the bottom:

\[2 - (-1)^3 + (-6) - [-1 - (-3)]\]

a) Simplify the bracket:

\[-1 - (-3)]

Negative multiplied to negative number is a positive number

\[-(-3) = +3\]

Therefore, the bracket term becomes

\[-1 + 3\]
b) Perform the addition:
\[ -1 + 3 = 2 \]
Therefore, the bracket term is 2
Therefore, the expression becomes
\[ 2 - (-1)^3 + (-6) - [2] \]
c) Simplify the exponent:
\[ (-1)^3 = -1 \cdot -1 \cdot -1 = -1 \]
Therefore, the expression becomes
\[ 2 - (-1) + (-6) - [2] \]
d) Eliminate the parentheses and brackets:
i) A negative multiplied to negative number is a positive number.
\[ \rightarrow 2 + 1 + (-6) - [2] \]
ii) A positive multiplied to negative is a negative number.
\[ \rightarrow 2 + 1 - 6 - 2 \]
e) Perform arithmetic operations:
i) perform addition since it appears first from left to right:
\[ \rightarrow 3 - 6 - 2 \]
ii) Perform subtraction
\[ 3 - 6 = -3 \]
\[ \rightarrow -3 - 2 = -5 \]
Therefore, simplified bottom is \(-5\).

Step 3: Divide simplified top by simplified bottom.
Simplified top is \(-15\), and simplified bottom is \(-5\). Therefore, the division is
\[
\frac{-15}{-5}\]
**Step 4:** Reduce the fraction.

Top and bottom both are negative; therefore, the negative sign can be removed from both.

\[ \frac{15}{5} \]

By simplifying this fraction,

\[ \frac{15}{5} = 3 \]

**Conclusion:**

By using the order of operations, the solution for the given expression

\[ \frac{-13-2}{2-(-1)^3+(-6)-[-1-(-3)]} \]

is 3.

Please let me know if you have any question on this problem, or ‘Order of Operations’ generally. I will be here in the forum for the next hour.