This worksheet is all review from Basic Math/6th grade. Review each of these concepts going as in-depth as needed.

Order of Operations

PEMDAS

P – Do what's inside the parentheses first
E – then do exponents and monsters
M and D – multiply and/or divide from LEFT TO RIGHT doing what comes first
A and S – add and/or subtract from LEFT TO RIGHT doing what comes first

Reminders:

- How to multiply signed numbers:
  - Same signs result in a positive answer. $(+)(+)=+ \quad (-)(-)=+$
  - Different signs result in a negative answer $(+)(-)=- \quad (-)(+)=-$
- Parentheses go away when you multiply.
- Ask yourself whom the exponent belongs to. It only belongs to what it is right next to. If it is next to a parenthesis, everything inside belongs to the exponent. If it is just next to a number, the exponent ONLY belongs to the number.
- Add in missing 1's. You need to put 1's in front of any parentheses that don't already have a number in front. The only exception is if there is a division sign in front of the parenthesis; then no missing one is needed.

Practice Order of Operations Problems:

- $-3^2-18\div 9(-2-2)-\sqrt[3]{64}-8^0$
- $\sqrt[3]{216}-(-2-1)^2-12\div 4(-1-2)-(-3-5)^0$
- $-(-2-2)^2-\sqrt[3]{27}-9\div 3(-1-2)-3^2$
- $-3-2\left[-1-3(-1-1)-7^0\right]-3^2-10\div 5(-1-1)$

Absolute Value

Absolute value bars are a grouping symbol that has no meaning to students, so instead we call them super powered parenthesis. Because we treat them like parenthesis, and they have a super power that allows them to do to something special. Their super power is that they change everything inside of them into a positive. Once they use their super power the straight up and down bars lose their power and become regular parenthesis.

Example: $-\left|-8+2\right| \rightarrow -1\left|-6\right| \rightarrow -1(6) \rightarrow -6$

Practice Absolute Value Problems:

- Simplify: $-\left|-6+1\right|+\sqrt[5]{32}-7^0$
- Simplify: $-\left|-4+3\right|-2\left|-2-3\right|+3\left|-7\right|$
    - It can be challenging to tell what is inside the bars. Building houses makes it very clear. Start at the first bar and draw a roof between the first and second bars. Be sure to leave room for the yard and then build another house.

      Like this: $-\overbrace{\left|-4+3\right|}-2\overbrace{\left|-2-3\right|}+3\overbrace{\left|-7\right|}$
- Simplify: $-5\left|-1-1\right|-3\left|-4+8\right|-\left|-9\right|-4$
- Simplify: $-\left|-2-1\right|^3-\left|-3(-2-2)-5\right|-\left|-4+6\right|$
- Simplify: $-3^0-\left|-3-3\right|-2\left|-8+9\right|+3\left|-5+8\right|^3$