

Absolute Value Equations

- 1) Isolate the absolute value part of the equation
- 2) Set up 2 equations, ^{with no absolute value bars} one with the "positive version" of the non-absolute value side of the equation, and one with the "negative version"
- 3) Check answers by plugging into original equation

Solve $|x-5|-2=1$

$$\begin{array}{r} |x-5|-2=1 \\ +2 \quad +2 \\ \hline \end{array}$$

$$|x-5|=3$$

$$x-5=3$$

$$+5 \quad +5$$

$$\boxed{x=8}$$

$$x-5=-3$$

$$+5 \quad +5$$

$$\boxed{x=2}$$

↓

check answers

$$|8-5|-2=1$$

$$|3|-2=1$$

$$3-2=1$$

$$1=1 \checkmark$$

$$|2-5|-2=1$$

$$|-3|-2=1$$

$$3-2=1$$

$$1=1 \checkmark$$