## Absolute Values:

## Algebraic Solution:

1. Get the absolute value expression by itself on one side of the equation
2. Set the expression in the absolute value equal to the positive value of the other side of the equation AND set the expression in the absolute value equal to the negative value of the other side of the equation.
3. Solve for the value in BOTH equations

## Graphic Solution:

1. Get the absolute value expression by itself on one side of the equation
2. Set the expression in the absolute value equal to the positive value of the other side of the equation AND set the expression in the absolute value equal to the negative value of the other side of the equation.
3. Graph both equations.
a. If there is NO negative sign in front of the absolute values, keep the parts of the graphs where they intersect and ABOVE the point of intersection.
b. If there IS a negative sign in front of the absolute values, keep the parts of the graphs where they intersect and BELOW the point of intersection.

Solve algebraically

1. $7=|x-3|$
2. $8=|x+4|$
3. $9+x=|-3 x+5|$
4. $4 x-8=-4|2 x-4|$
5. $-3 x+4=|-x-8|$
6. $0=\left|x^{2}-9\right|$
7. $0=\left|9 x^{2}-16\right|$
8. $0=\left|-x^{2}-4 x-4\right|$ \{hint: use the quadratic formula\}

Solve graphically
9. $y=|x-3|$

10. $y=|x+4|$
11. $y+x=|-3 x+5|$
12. $4 x-y=-4|2 x-4|$



13. $-3 x+y=|-x-8|$

14. $y=\left|x^{2}-9\right|$
15. $y=\left|9 x^{2}-16\right|$

16. $y=\left|-x^{2}-4 x-4\right|$ \{hint: use the quadratic formula\}


