

## CALCULATION FORMULAS

<b>AMOUNT CONVERSIONS</b>	
Ounces to Pounds	Ounces $\div$ 16 = <b>Pounds</b>
Fluid Ounces to Gallons	Fluid Ounces $\div$ 128 = <b>Gallons</b>

<b>DISTANCE CONVERSIONS</b>	
Yards to Feet	Yards <b>X</b> 3 = <b>Feet</b>
Meters to Feet	Meters <b>X</b> 3.28 = <b>Feet</b>

<b>SURFACE AREA</b>	
Rectangle or Square	Length <b>X</b> Width = <b>Square Feet</b>
Circle ( $\pi r^2$ )	Radius <b>X</b> Radius <b>X</b> 3.14 = <b>Square Feet</b> (Radius = Diameter $\div$ 2)

<b>POOL WATER VOLUME</b>	
Average Depth	(Shallow + Deep) $\div$ 2
Water Volume	Surface Area <b>X</b> Avg. Depth <b>X</b> 7.5

<b>TURN OVER</b>	
Turnover Rate (TOR in Hours)	Water Volume $\div$ Flow Rate $\div$ 60
Flow Rate (FR in GPM)	Water Volume $\div$ TOR $\div$ 60
Water Volume (in Gallons)	TOR <b>X</b> Flow Rate <b>X</b> 60

<b>FILTER SIZING</b>	
Filter Area (FA in Sq. Ft.)	Flow Rate $\div$ Filter Media Rate
Filter Media Rate (FMR)	Flow Rate $\div$ Filter Area
Flow Rate (FR in GPM)	Filter Area <b>X</b> FMR

<b>HEATER SIZING</b>	
BTU	Water Volume <b>X</b> 8.33 <b>X</b> Temp. Rise
Time to reach Temp. (in Hours) (assuming no heat loss in plumbing or pool)	BTUs $\div$ (Heater Rating <b>X</b> Efficiency Rating)
Cost (Natural Gas: 1 Therm = 100,000 BTUs)	Time <b>X</b> Heater Rating $\div$ 100,000 <b>X</b> Therm Rate