

**CHAPTER FOUR**  
**RESULTANT**  
**AND**  
**DISCUSSION**

## 4.1 Result:

After making calculation in the previous chapter, it can be summarized in the following table:

Table (4.1) table between velocity and power

V(m/s)	P(watt)
0	0
2	3.4592
4	27.6736
6	93.3984
8	221.3888
10	423.4000
12	747.1872
14	1186.5056
16	1771.1104
18	2521.7568
20	3459.200

We note from table the power of wind turbine is proportional to the cube of wind speed. Considering that the air density and the area of turbine is constant value.

Diagrams:

A diagram can represent the mathematical relationship between two variable, power of wind turbine and wind speed.

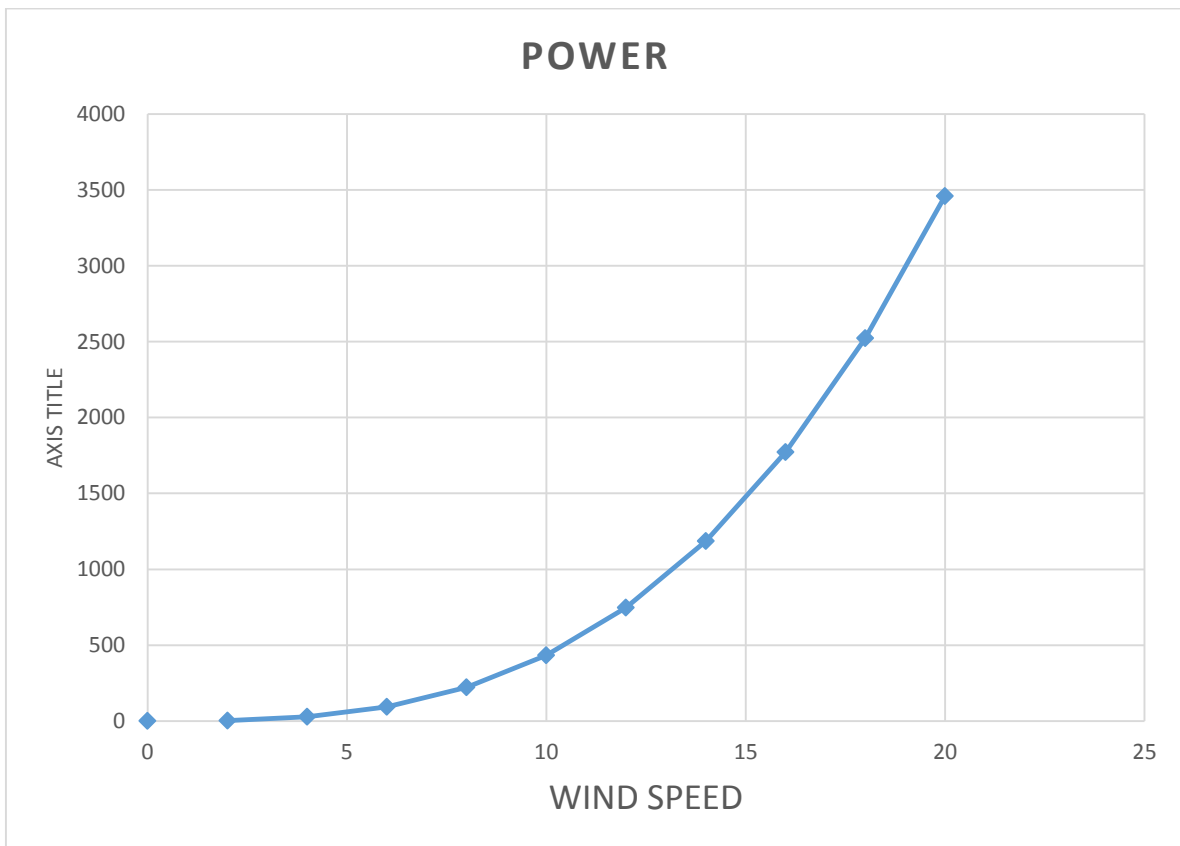


Figure (4.1) show the relation between the power turbine and wind velocity

After making calculation in chapter three we can draw the following conclusion:

For The following conclusions can be derived from equation (3.1):

- For the same turbine and at the same time, if the wind speed doubles, the Power in the wind turbine increases by a factor of 8.
- For the same turbine and the same wind speed, if the weather is cold (Higher density), more power exists in the wind available for the turbine.
- In the same weather conditions and for the same wind speed, a turbine that is two times larger in cross-sectional area than a smaller one has twice as Much wind power available to it.