## ACADEMIC TYPE MAX/MIN PROBLEMS.

1. The graph shown is $\boldsymbol{y}=12-\boldsymbol{x}^{2}$
for $0 \leq x \leq \sqrt{ } 12$
P is the general point $(x, y)$ on the curve
A rectangle is drawn passing through P and the origin $(0,0)$

Find the maximum area of the rectangle.

2. The graph shown is $y=(x-6)^{2}$
for $0 \leq x \leq 6$
P is the general point $(x, y)$ on the curve
A rectangle is drawn passing through P and the origin $(0,0)$

Find the maximum area of the rectangle.

3. The graph shown is $\boldsymbol{y}=\boldsymbol{6} \boldsymbol{x}-\boldsymbol{x}^{2}$
for $0 \leq x \leq 6$
P is the general point $(x, y)$ on the curve
A triangle is drawn passing through P and the origin $(0,0)$

Find the maximum area of the triangle.


## EXCELLENCE ONLY!

4. The graph shown is $\boldsymbol{y}=(\boldsymbol{x}-\boldsymbol{b})^{2}$ for $\boldsymbol{0} \leq \boldsymbol{x} \leq \boldsymbol{b}$
P is the general point $(\boldsymbol{x}, \boldsymbol{y})$ on the curve A rectangle is drawn passing through P and the origin $(0,0)$
Find the maximum area of the rer angle.

