LAB 2 SOLUTIONS

COL100

1. Poly function

```
let model_check_poly x y z = (x>0) && (y>0) && (z>0);;

let model_poly x y z =if model_check_poly x y z then
        x*x*x + 2*x*y*z*z - y*z + 1 else -1;;
```

2. Mcuberoot function

```
let model_check_mcuberoot x y z = (x*.y*.z)>0.0 ;;

let model_mcuberoot (x:float) (y:float) (z:float) = if model_check_mcuberoot x y z
then
        (x*.y*.z)**(1.0/.3.0) else -1.0;;
```

3. Nlog function

```
let model_check_nlog x = true ;;

let model_nlog x:float = if model_check_nlog x then
        log (x +. sqrt(x *. x +. 1.0))
   else -1.0;;
```

4. Degrees_to_radians function

```
let  model_check_degrees_to_radians deg = if deg<0.0 then deg+.360.0 else
(if deg>=360.0 then deg-.360.0 else deg);;

let model_degrees_to_radians angle:float =
        let pi = 4.0 *. (atan 1.0) in
                ((pi) /. (180.0)) *. (model_check_degrees_to_radians angle);;
```