Name _____

[06-02-13D-T9]

$$f(x) = a(x-h)^2$$

■ **A. Discuss the function *f* defined by $f(x) = (x-5)^2$. Give complete answers using correct notation.**

■ **1. Domain**

■ **2. Range**

■ **3. Zeros**

■ **4. Asymptotes: There are none**

■ **5. Extreme values (maximum, minimum).**

■ **6. Monotonicity (increasing, decreasing)**

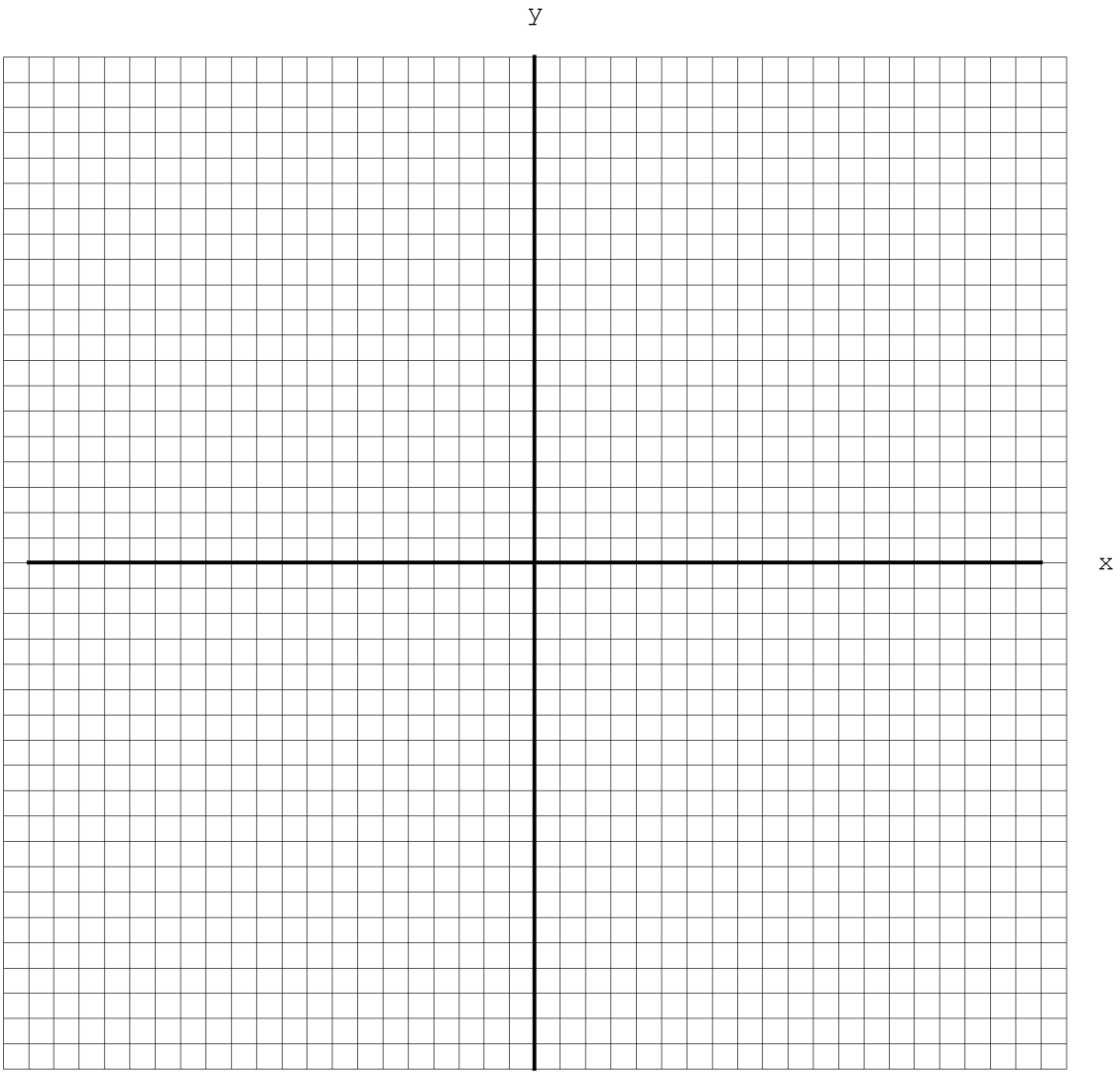
■ **7. Symmetry (state the line of symmetry, if it exists)**

■ **8. Rate of change (constant or variable? Support your answer)**

■ **Complete the table for $f(x) = (x - 5)^2$**

x	0	1	2	3	4	5	6	7	8	9	10
x - 5											
$(x - 5)^2$											

■ **Graph the function**



■ **B. Discuss the function f defined by $f(x) = -\frac{1}{2}(x+2)^2$. Give complete answers using correct notation.**

■ **1. Domain**

■ **2. Range**

■ **3. Zeros**

■ **4. Asymptotes: There are none**

■ **5. Extreme values (maximum, minimum)**

■ **6. Monotonicity (increasing, decreasing)**

■ **7. Symmetry (state the line of symmetry, if it exists)**

■ **8. Rate of change (constant or variable? Support your answer)**

■ **Complete the table for $f(x) = -\frac{1}{2}(x+2)^2$**

x	-7	-6	-5	-4	-3	-2	-1	0	1	2	
$x+2$											
$(x+2)^2$											
$\frac{-1}{2}(x+2)^2$											

■ **Graph the function**