

Name _____

[06-09-20-T11-H]

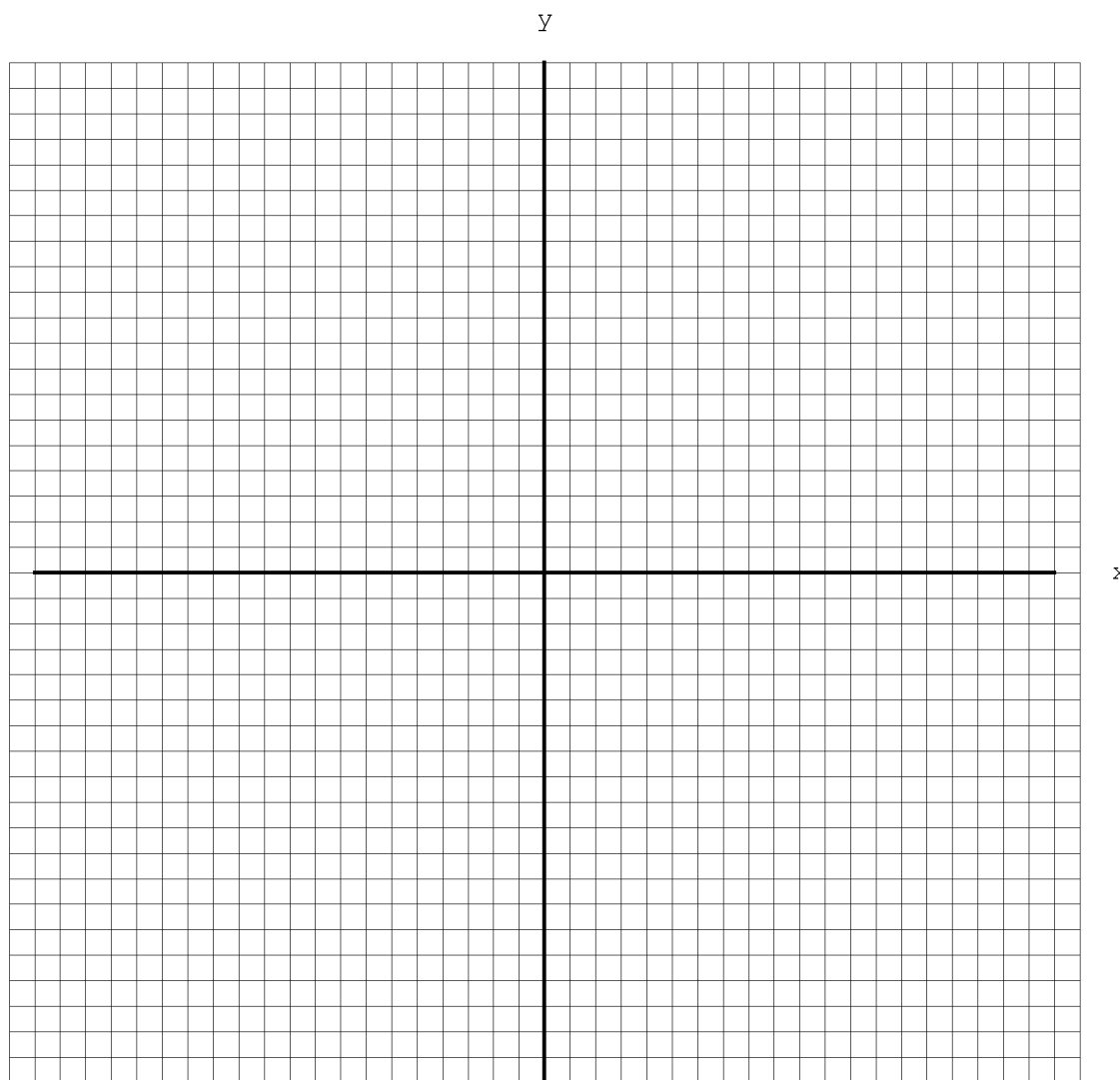
$$f(x) = a(x - h)^2 + k$$

- **A. Discuss the function f defined by $f(x) = (x - 5)^2 - 3$. 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 $f(x) = (x - 5)^2 - 3$

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

■ Graph the function



■ **B. Discuss the function f defined by $f(x) = -\frac{1}{2}(x+2)^2 + 3$. 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 $f(x) = -\frac{1}{2}(x+2)^2 + 3$

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

■ Graph the function

