**Day 1**

**Opener** Given the equation $y= 2(x+1)(x-5)$ determine the following:

1. Is it a quadratic? Make a table of values and look at the

second differences to find out.

|  |  |
| --- | --- |
| x | y |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |
| 4 |  |
| 5 |  |

1. the direction of opening g) sketch the graph
2. the y-intecept (this is when x=\_\_\_\_\_), the x-intercepts (when y=\_\_\_\_)
3. How would you **calculate** the y-intercept if you didn’t have the table or graph?
4. axis of symmetry
5. vertex

This is what we call **Factored form** of a quadratic relation is $y=a(x-r)(x-s)$

* .
* .
* .

Eg. Given the quadratic equation $y= -2(x-4)(x+2)$ determine the following:

1. the direction of opening and shape
2. the y-intercept (this is when x=\_\_\_\_\_)
3. zeros

 sketch the graph

1. axis of symmetry k)vertex

**Day 2**

Eg. 2 Given the quadratic on the right (graphed), determine

1. the zeros
2. the equation of the axis of symmetry
3. the vertex
4. determine the equation of the parabola, in factored form $y=a(x-r)(x-s)$ (sub in what you know…and calculate …. a with algebra!)

Eg. 3. Given zeros at 3 and 7,

1. find the equation of the relation in factored form $y=a(x-r)(x-s)$, sub in what you know
2. sketch a couple possible versions of this quadratic.
3. are the zeros enough information?
4. why/ why not? graphically:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

algebraically:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Eg. 4 Find the equation of the parabola, in factored form if a = -2 and the x-intercepts are 8 and -6.

 $y=a(x-r)(x-s)$, sub in what you know

 b) Find the vertex of the quadratic.

Eg. 5. The x-intercepts of a parabola are 0 and 7 and it passes through the point (2.-30)/ Determine:

1. the equation of the parabola, in factored form.
2. the vertex