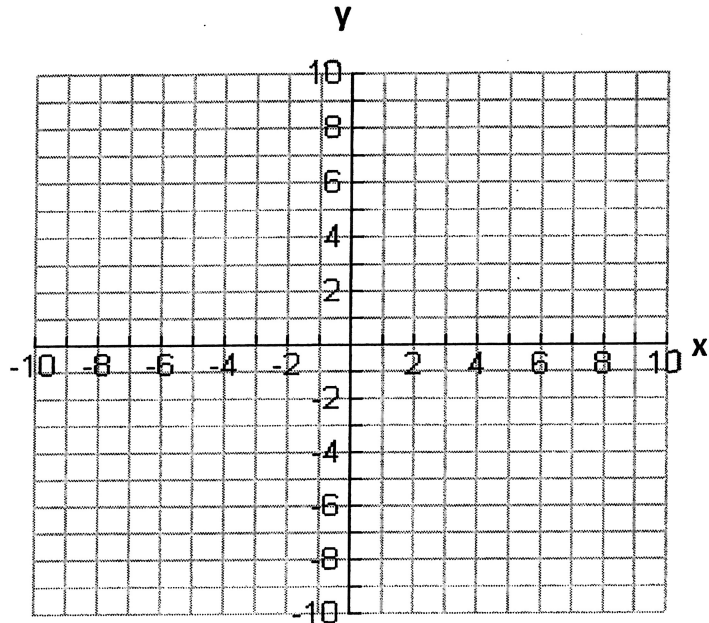


## Factored Form of a Quadratic Equation

1. Complete the table of values and graph the equation  $y = x^2 + 2x - 8$ . Label the axis of symmetry, vertex, and min/max.

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



2. What is the y-intercept?

**Note:** When a quadratic equation is expressed in “standard form”  $y = ax^2 + bx + c$ , the constant  $c$  is the y-intercept.

3. Factor the equation  $y = x^2 + 2x - 8$  to get \_\_\_\_\_.

This is called the \_\_\_\_\_ form of a quadratic equation.

4. From the above graph, what were the x-ints? \_\_\_\_\_ and \_\_\_\_\_.

**Note:** When a quadratic equation is expressed in “factored form”  $y = a(x - r)(x - s)$ , the constants  $r$  and  $s$  represent the x-intercepts.

### Example

Determine the x-int(s) and y-int for each quadratic equation:

a)  $y = x^2 + 4x - 5$

b)  $y = 2x^2 + 4x - 5$

## Practice/ Homework

For each quadratic equation:

- Write the factored form of the equation.
- Determine the x-int(s) and y-int.
- Complete the table of values.
- Graph the function.
- Label the vertex as min/max.

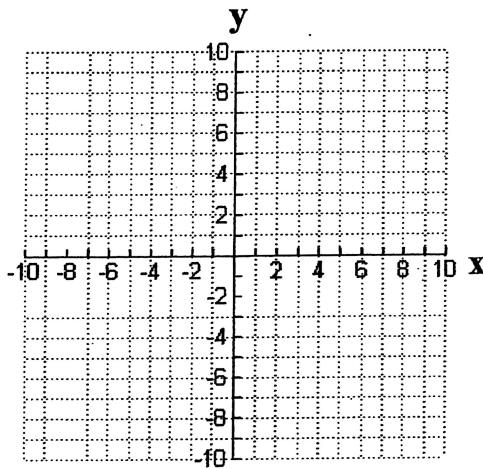
a)  $y = x^2 + 2x - 3$

**Factored Form:**

**y-int:**

**x-int(s):**

x	y
-3	
-2	
-1	
0	
1	



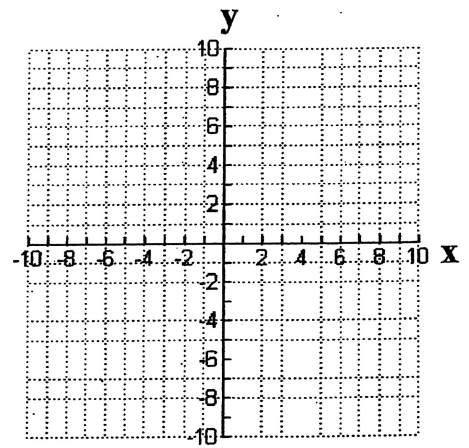
b)  $y = x^2 - 4$

**Factored Form:**

**y-int:**

**x-int(s):**

x	y
-2	
-1	
0	
1	
2	



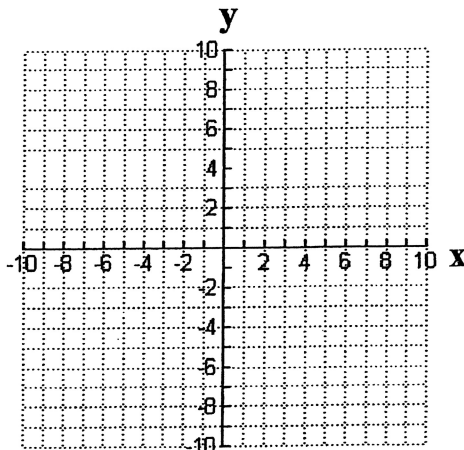
c)  $y = x^2 - 2x - 8$

**Factored Form:**

**y-int:**

**x-int(s):**

x	y
-2	
-1	
0	
1	
2	
3	
4	



d)  $y = x^2 - 6x + 5$

**Factored Form:**

**y-int:**

**x-int(s):**

x	y
1	
2	
3	
4	
5	

