

BE-1B

TUESDAY 1-8-08

Solve:

① $x^2 - 9x + 14 = 0$

② Check your solution(s) to #1.

SEM 2 $\Rightarrow$ FRESH START!

$$ax^2 + bx + c = 0$$

$$x^2 - 9x + 14 = 0$$

sum $\Rightarrow -9$

prod $\Rightarrow 14$

$\begin{array}{c} \diagup \quad \diagdown \\ -2 \quad -7 \end{array}$

$$x^2 - 2x - 7x + 14 = 0$$

$$x(x-2) + -7(x-2) = 0$$

$$(x-2)(x-7) = 0$$

$$\boxed{x = 2, 7}$$

$$ax^2 + bx + c = 0 \quad \text{QUADRATIC EQUATION}$$

$$ax^2 + bx + c = y \quad \text{QUADRATIC FUNCTION}$$

LINEAR FUNCTION $y = f(x) = mx + b$

QUADRATIC FUNCTION $y = f(x) = ax^2 + bx + c$



WHEN $y = 0$, the graph of the function is on the x-axis that is, when $y = 0$, the x values that make this true are the x-intercepts for the function.

$$y = f(x) = x^2 - 9x + 14$$

SOLVE $\Rightarrow$ BELL EXERCISE

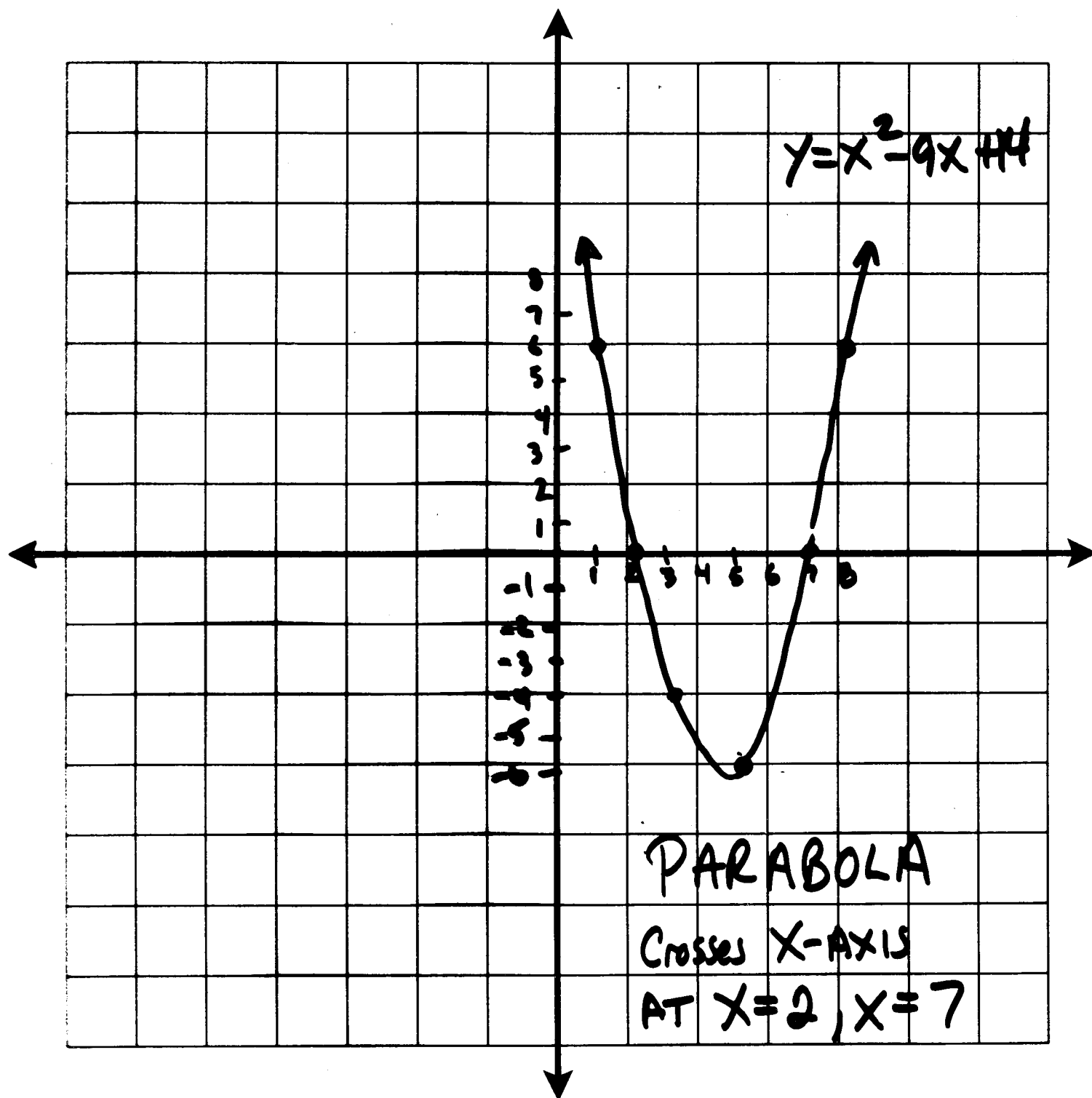
$$0 = x^2 - 9x + 14$$

$$\boxed{x = 2, 7}$$

THESE ARE THE X-INTERCEPTS, LET'S LOOK AT THE GRAPH.

How CAN you graph ANY function of x ,
no matter how complicated, if you
don't have any idea what the graph
will look like? What Tool will you use?

x	$y = f(x) = x^2 - 9x + 14$
-2	$(-2)^2 - 9(-2) + 14 = 36$
-1	$(-1)^2 - 9(-1) + 14 = 24$
0	$(0)^2 - 9(0) + 14 = 14$
1	$(1)^2 - 9(1) + 14 = 6$
$x = 2$	$(2)^2 - 9(2) + 14 = 0 = y$
7	$(7)^2 - 9(7) + 14 = 0 = y$
8	$(8)^2 - 9(8) + 14 = 6$
3	$(3)^2 - 9(3) + 14 = -4$
5	$(5)^2 - 9(5) + 14 = -6$



Homework:

① Solve the quadratic equation:

$$x^2 + 2x - 15 = 0$$

NOTE THE SOLUTIONS will be the two
x-intercepts of the quadratic
function $x^2 + 2x - 15 = y$

② Use a T-TABLE AND A
full sheet of graph paper,
and graph the quadratic function

$$y = f(x) = x^2 + 2x - 15$$

(see Ch. 10-1)