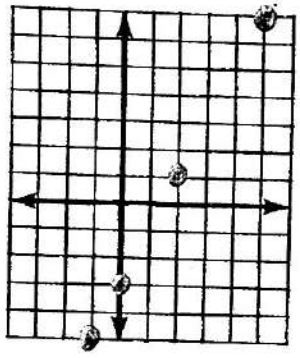
FROM LINEAR TO QUADRATIC

Complete each table and graph the function.

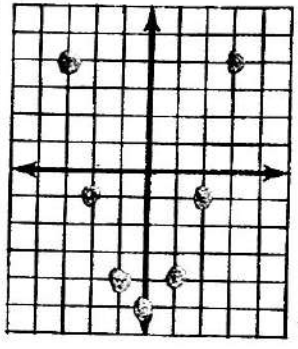
① $y = 2x - 3$

x	y
5	7
2	1
0	-3
-1	-5



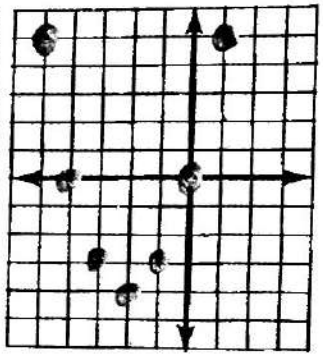
② $y = x^2 - 5$

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



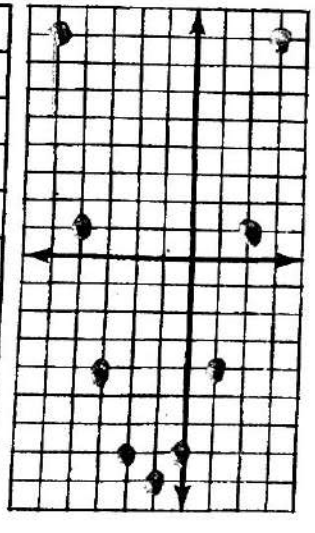
③ $y = x^2 + 4x$

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



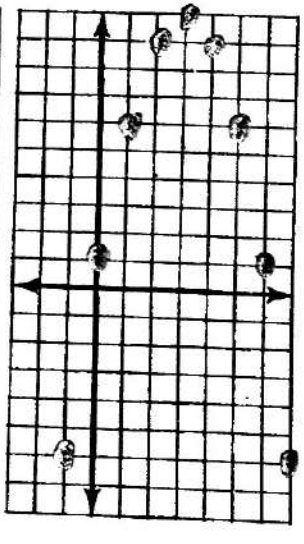
④ $y = x^2 + 2x - 7$

x	y
-5	8
-4	1
-3	-4
-2	-7
-1	-8
0	-7
1	-4
2	1
3	8



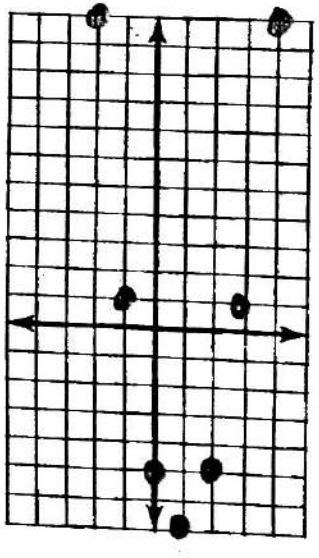
⑤ $y = -x^2 + 6x + 1$

x	y
7	0
6	1
5	6
4	9
3	10
2	9
1	6
0	1
-1	



⑥ $y = 2x^2 - 4x - 5$

x	y
4	11
3	1
2	-5
1	-7
0	-5
-1	1
-2	11



OBJECTIVE 1–e: To graph quadratic functions and compare them to a linear function.

① $y = 2x - 3$

$2(5)-3$ $\quad$ $2(2)-3$ $\quad$ $2(0)-3$ $\quad$ $2(-1)-3$

$10-3$ $\quad$ $4-3$ $\quad$ $0-3$ $\quad$ $-2-3$

7 $\quad$ 1 $\quad$ -3 $\quad$ -5

② $y = x^2 - 5$

$(3)^2-5$ $\quad$ $(2)^2-5$ $\quad$ $(1)^2-5$ $\quad$ $(0)^2-5$

$9-5$ $\quad$ $4-5$ $\quad$ $1-5$ $\quad$ $0-5$

4 $\quad$ -1 $\quad$ -4 $\quad$ -5

$(-1)^2-5$ $\quad$ $(-2)^2-5$ $\quad$ $(-3)^2-5$

$1-5$ $\quad$ $4-5$ $\quad$ $9-5$

-4 $\quad$ -1 $\quad$ 4

③ $y = x^2 + 4x$

$(1)^2+4(1)$ $\quad$ $(0)^2+4(0)$ $\quad$ $(-1)^2+4(-1)$

$1+4$ $\quad$ $0+0$ $\quad$ $1+(-4)$

5 $\quad$ 0 $\quad$ -3

$(-2)^2+4(-2)$ $\quad$ $(-3)^2+4(-3)$ $\quad$ $(-4)^2+4(-4)$

$4-8$ $\quad$ $9-12$ $\quad$ $16-16$

-4 $\quad$ -3 $\quad$ 0

$(-5)^2+4(-5)$

$25-20$

5

KEY H

④ $y = x^2 + 2x - 7$

$(-5)^2 + 2(-5) - 7$
$25 - 10 - 7$
8

$(-4)^2 + 2(-4) - 7$
$16 - 8 - 7$
1

$(-3)^2 + 2(-3) - 7$
$9 - 6 - 7$
-4

$(-2)^2 + 2(-2) - 7$
$4 - 4 - 7$
-7

$(-1)^2 + 2(-1) - 7$
$1 - 2 - 7$
-8

$(0)^2 + 2(0) - 7$
$0 + 0 - 7$
-7

$(1)^2 + 2(1) - 7$
$1 + 2 - 7$
-4

$(2)^2 - 2(2) - 7$
$4 + 4 - 7$
1

$(3)^2 - 2(3) - 7$
$9 + 6 - 7$
8

⑤ $y = -x^2 + 6x + 1$

$-(7)^2 + 6(7) + 1$
$-49 + 42 + 1$
-6

$-(6)^2 + 6(6) + 1$
$-36 + 36 + 1$
1

$-(5)^2 + 6(5) + 1$
$-25 + 30 + 1$
6

$-(4)^2 + 6(4) + 1$
$-16 + 24 + 1$
9

$-(3)^2 + 6(3) + 1$
$-9 + 18 + 1$
10

$-(2)^2 + 6(2) + 1$
$-4 + 12 + 1$
9

$-(1)^2 + 6(1) + 1$
$-1 + 6 + 1$
6

$-(0)^2 + 6(0) + 1$
$0 + 0 + 1$
1

$-(-1)^2 + 6(-1) + 1$
$-1 - 6 + 1$
-6

⑥ $y = 2x^2 - 4x - 5$

$2(4)^2 - 4(4) - 5$
$2(16)$
$32 - 16 - 5$
11

$2(3)^2 - 4(3) - 5$
$2(9)$
$18 - 12 - 5$
1

$2(2)^2 - 4(2) - 5$
$2(4)$
$8 - 8 - 5$
-5

$2(1)^2 - 4(1) - 5$
$2(1)$
$2 - 4 - 5$
-7

$2(0)^2 - 4(0) - 5$
$0 - 0 - 5$
-5

$2(-1)^2 - 4(-1) - 5$
$2(1)$
$2 + 4 - 5$
1

$2(-2)^2 - 4(-2) - 5$
$2(4)$
$8 + 8 - 5$
11