1. Graph the parabola $y = x^2 - 2x - 8$. Compute the coordinates of at least five points on the parabola, including vertex and intercepts.

$y = x^2 - 2x - 8$ polynomial form $y-$intercept: _____

$y =$_____ standard form vertex: _____

$y =$_____ factored form $x-$intercept(s):_____

additional points: _____

Table:

x	y
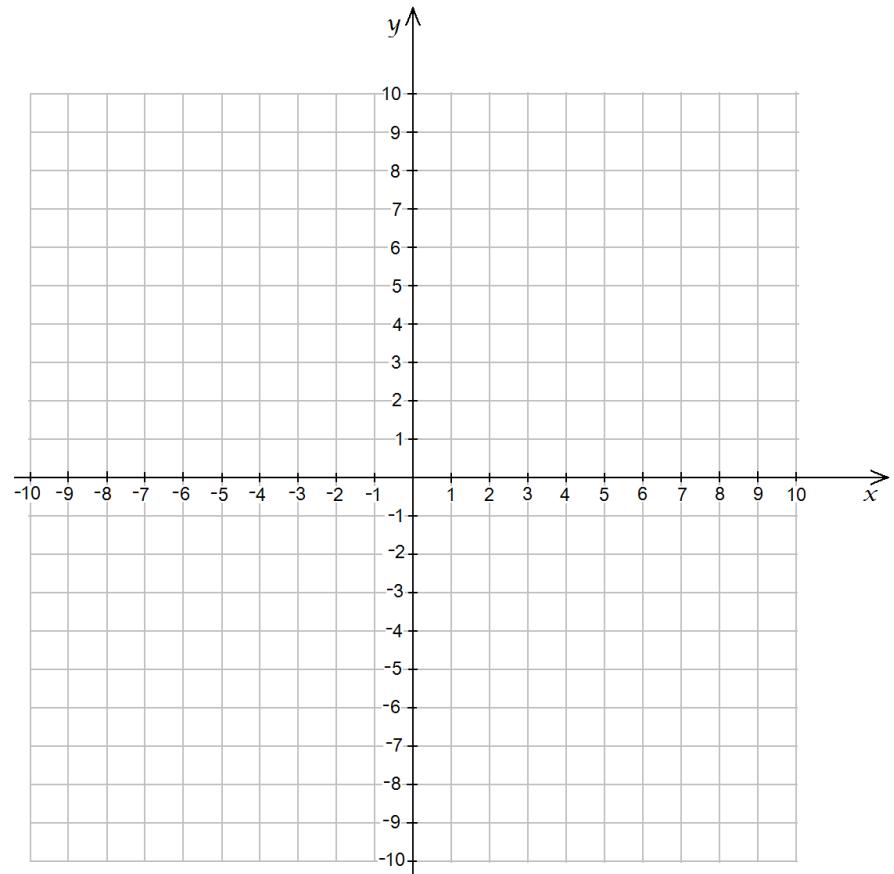
Graph:

2. Graph the parabola $y = x^2 + 6x + 5$. Compute the coordinates of at least five points on the parabola, including vertex and intercepts.

$y = x^2 + 6x + 5$ polynomial form $y-$intercept: _____

$y =$ _____   standard form   vertex: _____

$y =$ _____   factored form $x-$intercept(s): _____

additional points: _____

Table:

x	y

Graph:

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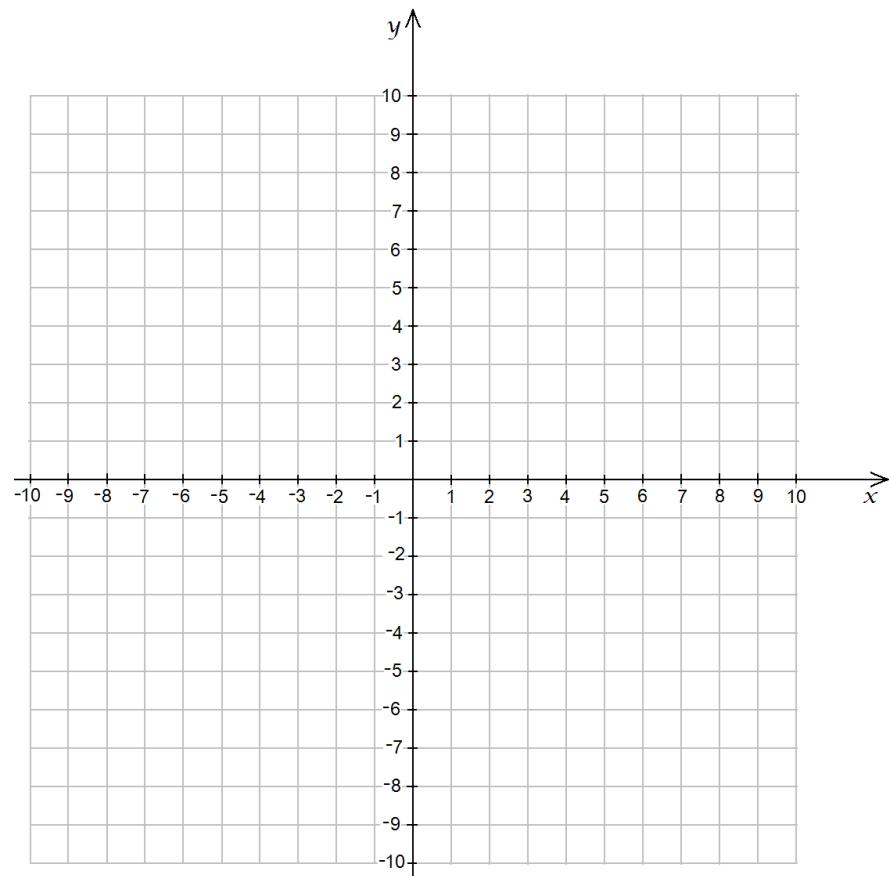
3. Graph the parabola $y = x^2 - 4x + 3$. Compute the coordinates of at least five points on the parabola, including vertex and intercepts.

$y = x^2 - 4x + 3$ polynomial form $y-$intercept: _____

$y = $ _____   standard form   vertex: _____

$y = $ _____   factored form $x-$intercept(s): _____

additional points: _____

Table: Graph:

x	y

Graphing a Parabola
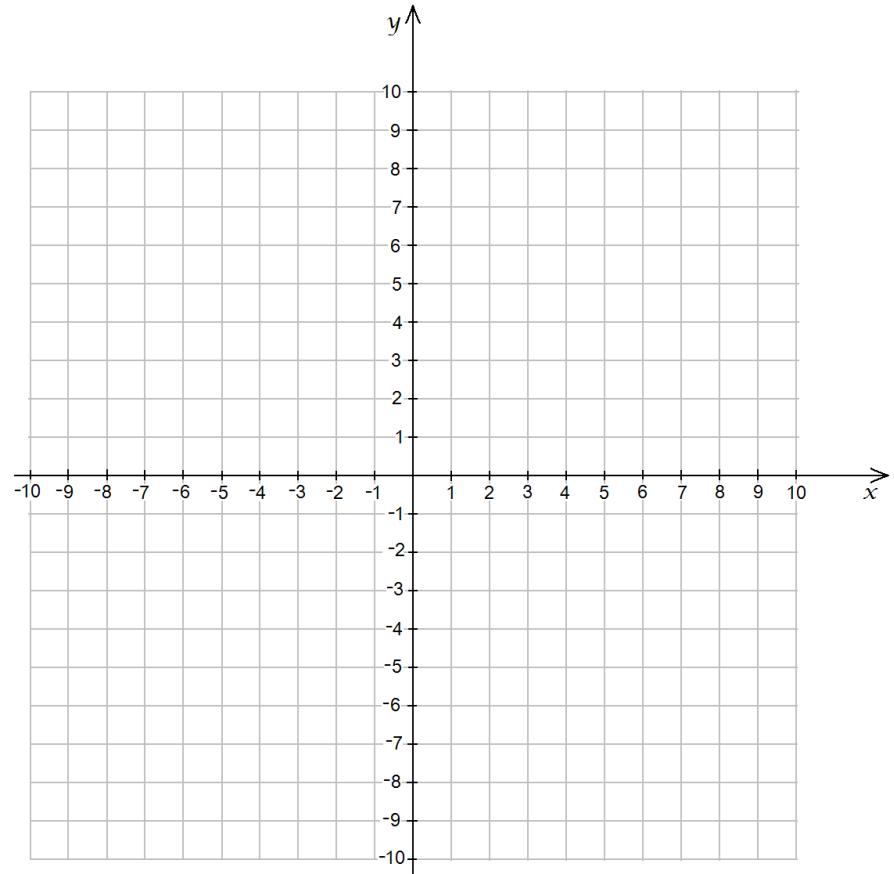
4. Graph the parabola $y = x^2 + 2x - 15$. Compute the coordinates of at least five points on the parabola, including vertex and intercepts.

$y = x^2 + 2x - 15$ polynomial form $y-$intercept: _____

$y = $_____   standard form   vertex: _____

$y = $_____   factored form $x-$intercept(s):_____

additional points: _____

Table: Graph:

x	y
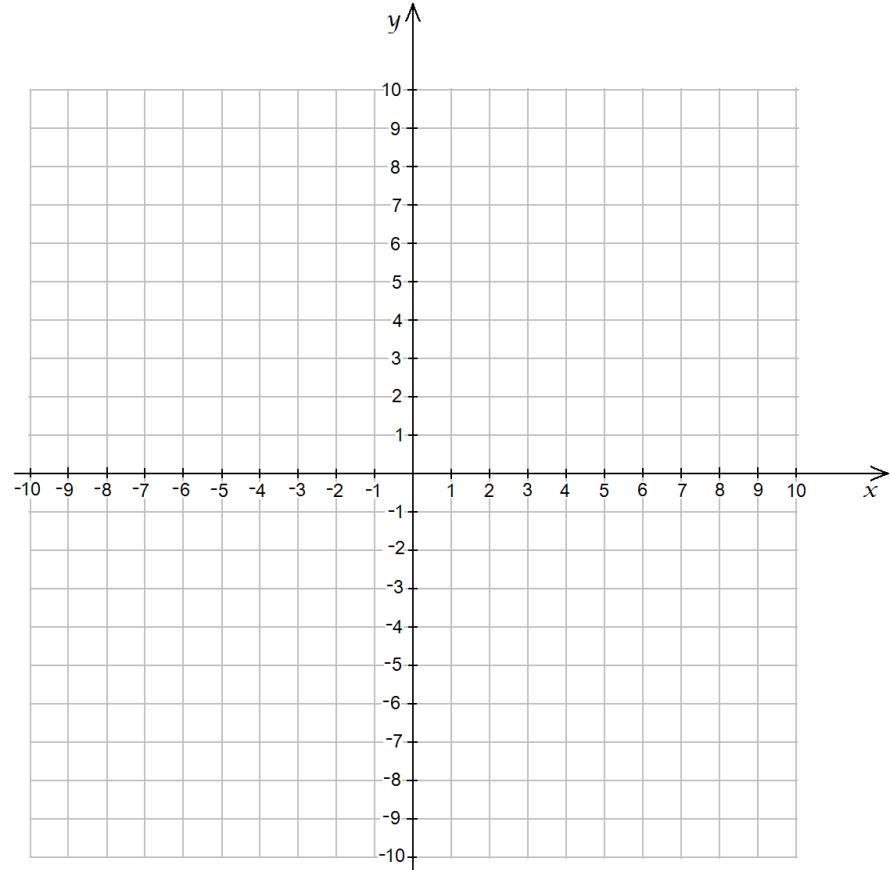
Answers

1. $y = x^2 - 2x - 8$ polynomial form $y-$intercept: $(0, -8)$

    $y = (x - 1)^2 - 9$ standard form   vertex: $(1, -9)$

    $y = (x + 2)(x - 4)$ factored form $x-$intercept(s): $(-2, 0)$ and $(4, 0)$

additional points: $(-3, 7)$ $(-1, -5)$, $(2, -8)$, $(3, -5)$, $(5, 7)$

Table: Graph:

| x	y
-3	7
-2	0
-1	-5
0	-8
1	-9 vertex
2	-8
3	-5
4	0
5	7
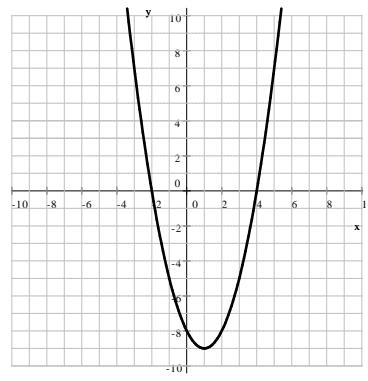
2. $y = x^2 + 6x + 5$ polynomial form $y-$intercept: $(0, 5)$

    $y = (x + 3)^2 - 4$ standard form   vertex: $(-3, -4)$

    $y = (x + 5)(x + 1)$ factored form $x-$intercept(s): $(-5, 0)$ and $(-1, 0)$

additional points: $(-6, 5)$, $(-4, -3)$, $(-2, -3)$, $(1, 12)$

Table: Graph:

x	y
-6	5
-5	0
-4	-3
-3	-4 vertex
-2	-3
-1	-0
0	5
1	12

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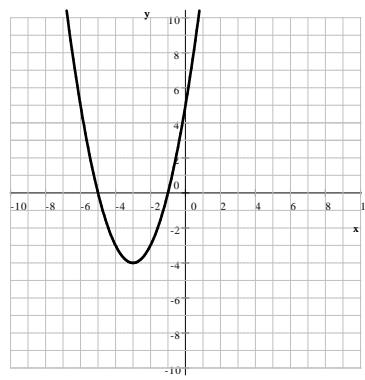
3. $y = x^2 - 4x + 3$ · · · · · polynomial form · · · · · y−intercept: $(0, 3)$

   $y = (x - 2)^2 - 1$ · · · · · standard form · · · · · vertex: $(2, -1)$

   $y = (x - 1)(x - 3)$ · · · · · factored form · · · · · x−intercept(s): $(1, 0)$ and $(3, 0)$

additional points: $(-1, 8)$, $(4, 3)$, $(5, 8)$, $(6, 15)$

Table: · · · · · · · · · · · Graph:

x	y	
-1	8	
0	3	
1	0	
2	-1	vertex
3	0	
4	3	
5	8	
6	15	
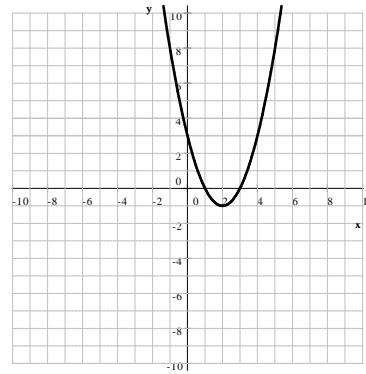
4. $y = x^2 + 2x - 15$ · · · · · polynomial form · · · · · y−intercept: $(0, -15)$

   $y = (x + 1)^2 - 16$ · · · · · standard form · · · · · vertex: $(-3, -4)$

   $y = (x + 5)(x - 3)$ · · · · · factored form · · · · · x−intercept(s): $(-5, 0)$ and $(3, 0)$

additional points: $(-6, 9)$, $(-4, -7)$, $(-3, -12)$, $(-2, -15)$, $(1, -12)$, $(2, -7)$

Table: · · · · · · · · · · · Graph:

x	y	
-6	9	
-5	0	
-4	-7	
-3	-12	
-2	-15	
-1	-16	vertex
0	-15	
1	-12	
2	-7	
3	0	
4	9	
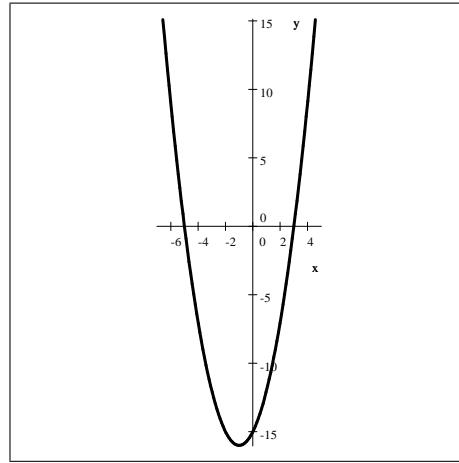
For more documents like this, visit our page at http://www.teaching.martahidegkuti.com and click on Lecture Notes. E-mail questions or comments to mhidegkuti@ccc.edu.

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