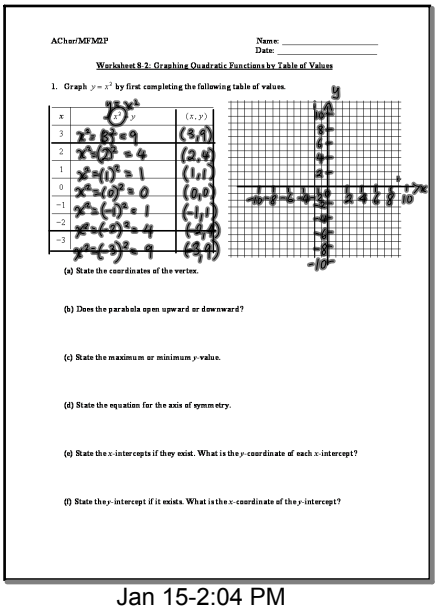
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Worksheet 8-2: Graphing Quadratic Functions by Table of Values

1. Graph $y = x^2$ by first completing the following table of values.

x	$y = x^2$	(x, y)
3	$3^2 = 9$	(3,9)
2	$2^2 = 4$	(2,4)
1	$1^2 = 1$	(1,1)
0	$0^2 = 0$	(0,0)
−1	$(-1)^2 = 1$	(−1,1)
−2	$(-2)^2 = 4$	(−2,4)
−3	$(-3)^2 = 9$	(−3,9)

(a) State the coordinates of the vertex.

(b) Does the parabola open upward or downward?

(c) State the maximum or minimum y-value.

(d) State the equation for the axis of symmetry.

(e) State the x-intercepts if they exist. What is the y-coordinate of each x-intercept?

(f) State the y-intercept if it exists. What is the x-coordinate of the y-intercept?

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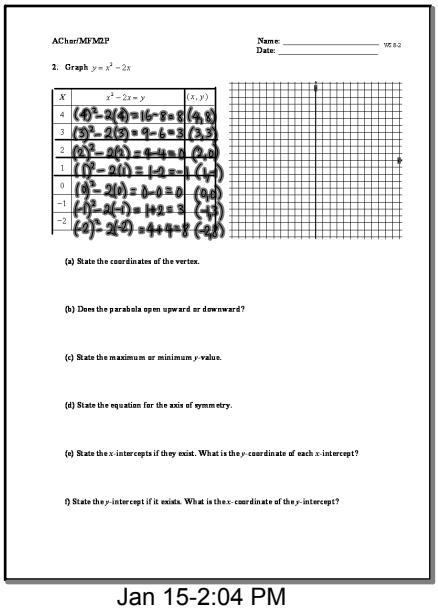
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2. Graph $y = x^2 - 2x$

x	$x^2 - 2x = y$	(x, y)
4	$(4)^2 - 2(4) = 16 - 8 = 8$	(4,8)
3	$(3)^2 - 2(3) = 9 - 6 = 3$	(3,3)
2	$(2)^2 - 2(2) = 4 - 4 = 0$	(2,0)
1	$(1)^2 - 2(1) = 1 - 2 = -1$	(1,−1)
0	$(0)^2 - 2(0) = 0 - 0 = 0$	(0,0)
−1	$(-1)^2 - 2(-1) = 1 + 2 = 3$	(−1,3)
−2	$(-2)^2 - 2(-2) = 4 + 4 = 8$	(−2,8)

(a) State the coordinates of the vertex.

(b) Does the parabola open upward or downward?

(c) State the maximum or minimum y-value.

(d) State the equation for the axis of symmetry.

(e) State the x-intercepts if they exist. What is the y-coordinate of each x-intercept?

f) State the y-intercept if it exists. What is the x-coordinate of the y-intercept?

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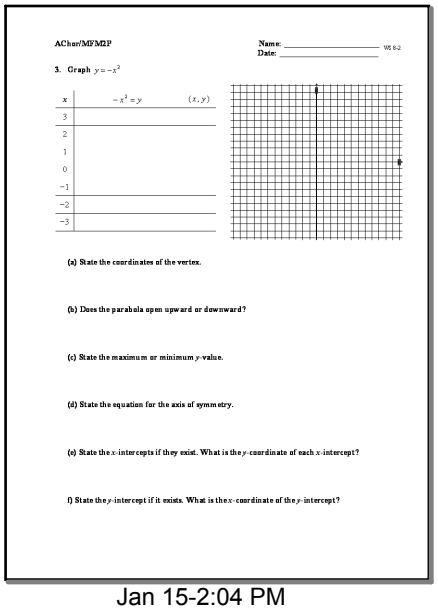
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3. Graph $y = -x^2$

x	$-x^2 = y$	(x, y)
3		
2		
1		
0		
−1		
−2		
−3		

(a) State the coordinates of the vertex.

(b) Does the parabola open upward or downward?

(c) State the maximum or minimum y-value.

(d) State the equation for the axis of symmetry.

(e) State the x-intercepts if they exist. What is the y-coordinate of each x-intercept?

f) State the y-intercept if it exists. What is the x-coordinate of the y-intercept?

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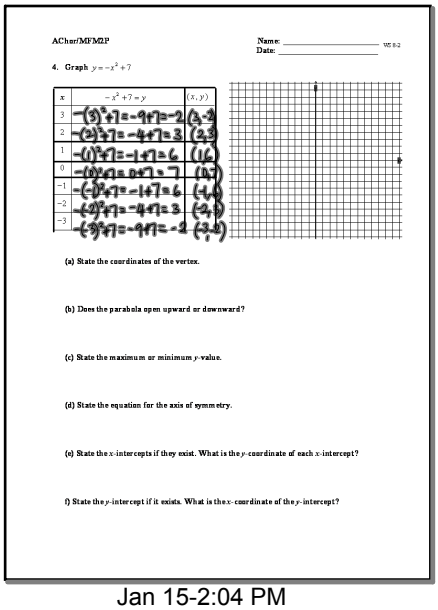
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4. Graph $y = -x^2 + 7$

x	$-x^2 + 7 = y$	(x, y)
3	$-(3)^2 + 7 = -9 + 7 = -2$	(3,−2)
2	$-(2)^2 + 7 = -4 + 7 = 3$	(2,3)
1	$-(1)^2 + 7 = -1 + 7 = 6$	(1,6)
0	$-(0)^2 + 7 = 0 + 7 = 7$	(0,7)
−1	$-(-1)^2 + 7 = -1 + 7 = 6$	(−1,6)
−2	$-(-2)^2 + 7 = -4 + 7 = 3$	(−2,3)
−3	$-(-3)^2 + 7 = -9 + 7 = -2$	(−3,−2)

(a) State the coordinates of the vertex.

(b) Does the parabola open upward or downward?

(c) State the maximum or minimum y-value.

(d) State the equation for the axis of symmetry.

(e) State the x-intercepts if they exist. What is the y-coordinate of each x-intercept?

f) State the y-intercept if it exists. What is the x-coordinate of the y-intercept?

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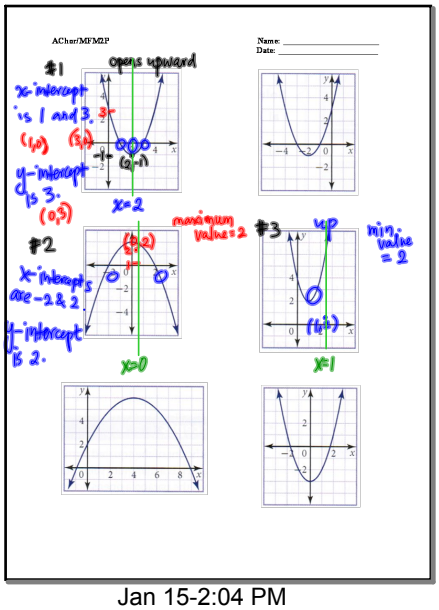

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