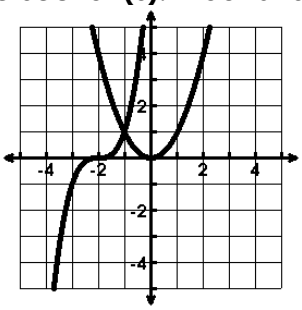
Acc. Algebra I 6.6 – Practice

Name: _____ Date: _____

Find the point of intersection(s). Your answer(s) should be an ordered pair (x, y).

1. _____



2. _____

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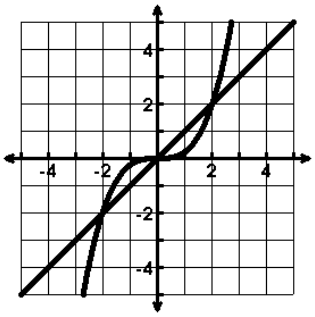


Find the point of intersection algebraically. Your answer should be an ordered pair (x, y).

3. $y = x + 4$
$y = -2x + 1$

_____

4. $y = 2x + 3$
$y = x + 6$

_____

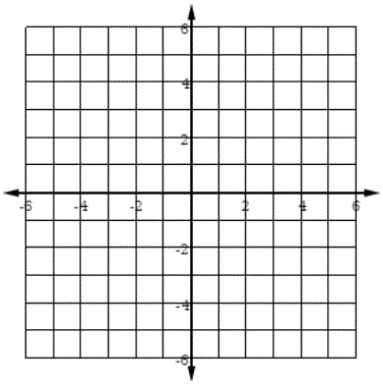
5. $y = x^2 - x - 20$
$y = x^2 + 4x + 10$

_____

Find the point of intersection graphically. Your answer(s) should be an ordered pair (x, y).

Graph your lines on the grids below.

6. $y = -2x + 6$
$y = (x - 3)^2 - 3$



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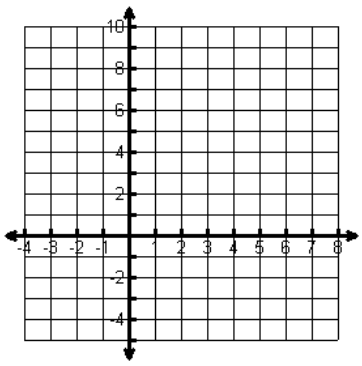
7. $y = 3$
$y = \frac{1}{2}(x - 6)^2 + 3$



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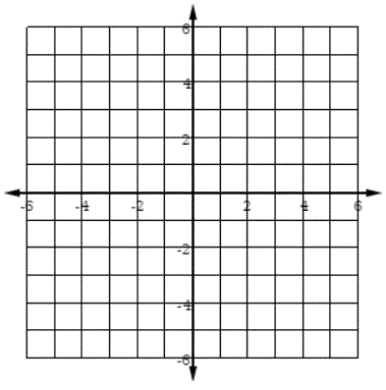
8. $y = 2x + 10$
$y = -(x + 4)^2 + 2$



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Comparing Properties of Quadratics Given in Different Forms

Two seagulls dive into the ocean. The given functions represent the height of each seagull above the surface of the ocean as a function of the seagull's horizontal distance from a center buoy. For each set of functions, **determine which bird descends deeper into the ocean**. Support your answer with facts (work).

1. $\begin{cases} \text{First Seagull: } f(x) = 3x^2 - 12x + 7 \\ \text{Second Seagull: } g(x) = \frac{1}{2}(x+2)^2 - 6 \end{cases}$

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2. First Seagull: $f(x) = 2x^2 - 8x + 11$

   Second Seagull:

x	-3	-1	1	3	5
g(x)	11	6	3	2	3

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3. Three turtles are running a race. They are free to roam in any direction. The following are their information from the starting line in ***t*** number of seconds.

   Elmer: $E(t) = t^2 - 4t + 4$ **Fred**: $F(t) = 3(t-2)^2 - 18$

   George:

x	1	2	3	4	5
G(t)	-18	-20	-18	-12	-2

- Which turtle is winning the race at *t* = 2?
- Which turtle is winning the race at *t* = 6?

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4. Which statement BEST describes the comparison of the y-values for f(x) and g(x)?

A. The values of f(x) will always exceed the values of g(x).

B. The values of g(x) will always exceed the values of f(x).

C. The values of f(x) exceed the values of g(x) over the interval [0, 5].

D. The values of g(x) begin to exceed the values of f(x) within the interval [4, 5]

x	f(x)	g(x)
0	0	-10
1	2	-9
2	4	-6
3	6	-1
4	8	6