Math II

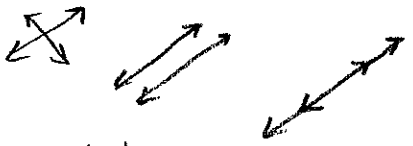
Chapter 6 day 5 Graphing systems

Name Key

Date_____ Period_____

1. Sketch examples to illustrate the different numbers of points of intersection that the following graphs can have.

a) 2 lines

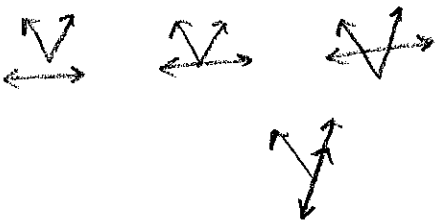


0 solutions
1 solutions
infinite solutions

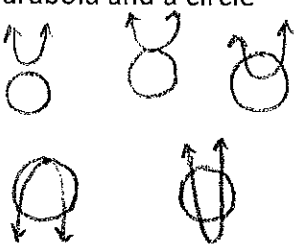
b) a line and a parabola

c) a line and a circle

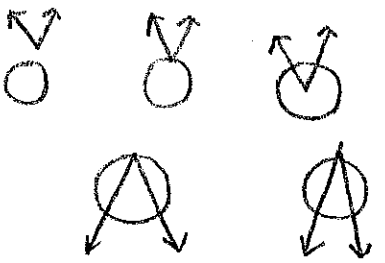
d) a line and an absolute value



e) a parabola and a circle

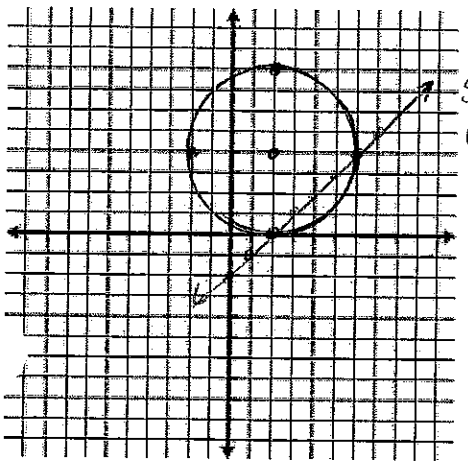


f) an absolute value and a circle



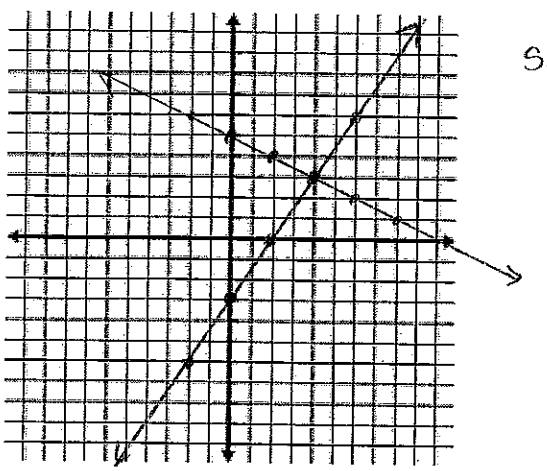
Solve the following systems.

2. $(x-2)^2+(y-4)^2=16$ C: (2,4)
$x-y=2$ R: 4
$-y=-x+2$
$y=x-2$



Solution
(2,0)
(6,4)

3. $2y-3x=-6$ $2y=3x-6$ $2y=-x+10$
$2y+x=10$ $y=\frac{3}{2}x-3$ $y=-\frac{1}{2}x+5$

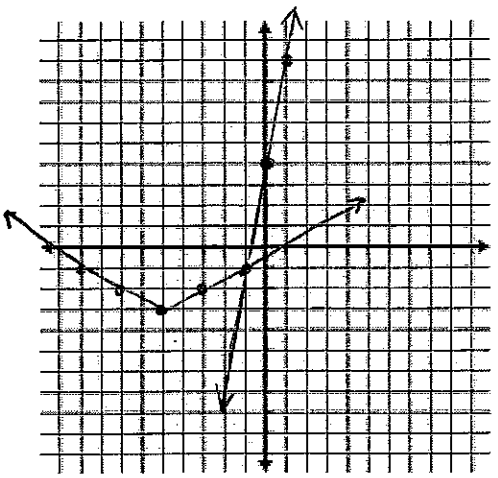


Solution
(4,3)

4. $y = \frac{1}{2}|x+5| - 3$

$5x - y = -4$ $\quad -y = -5x - 4$

$y = 5x + 4$

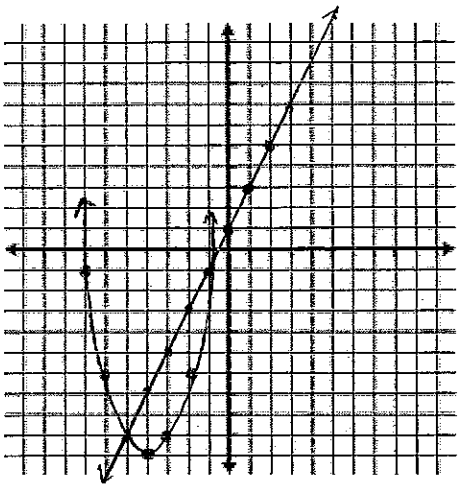


Solution

$(-1,-1)$

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

$y - 2x = 1$ $\quad y = 2x + 1$



Solution

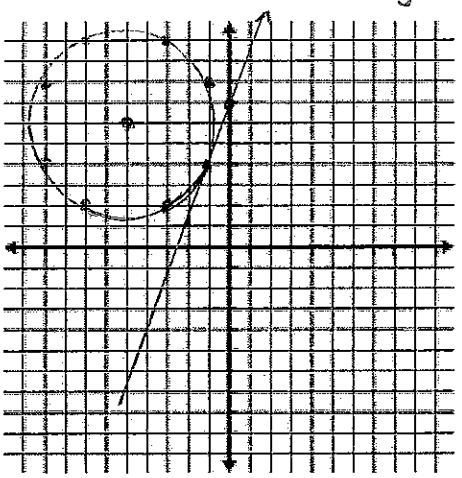
$(-1,-1)$

$(-5,-9)$

6. $(x+5)^2 + (y-6)^2 = 20$ $\quad C: (-5,6)$ $\quad R: \sqrt{20}$

$2y - 6x = 14$ $\quad 2y = 6x + 14$

$y = 3x + 7$

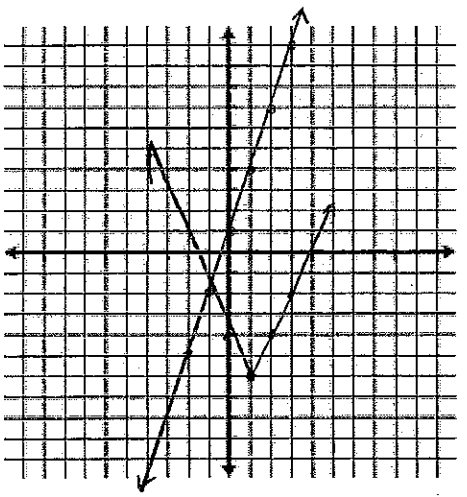


Solution

$(-1,4)$

7. $y = 2|x-1| - 6$

$y = 3x + 1$

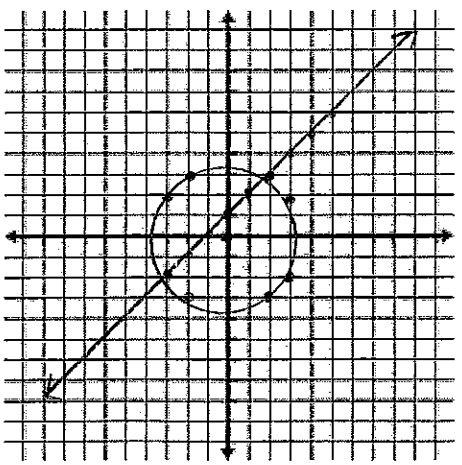


Solution

$(-1,-2)$

8. $x^2 + y^2 = 13$

$y = x + 1$



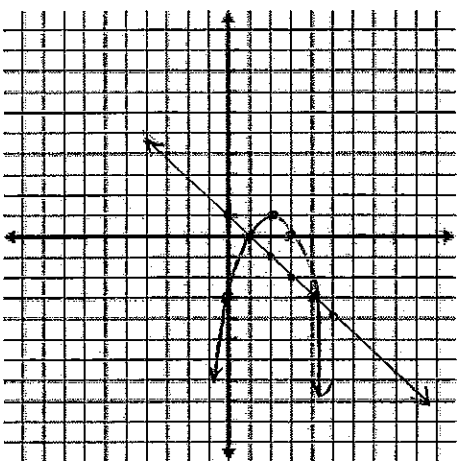
Solution

$(2,3)$

$(-3,-2)$

9. $y = -(x-2)^2 + 1$ $\quad V: (2,1)$

$x + y = 1$ $\quad y = -x + 1$



Solution

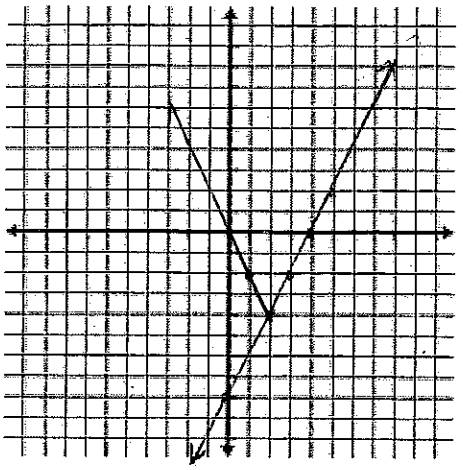
$(1,0)$

$(3,-3)$

10. $y = 2|x-2| - 4$ $(2,-4)$

$2y - 4x = -16$ $2y = 4x - 16$

$y = 2x - 8$



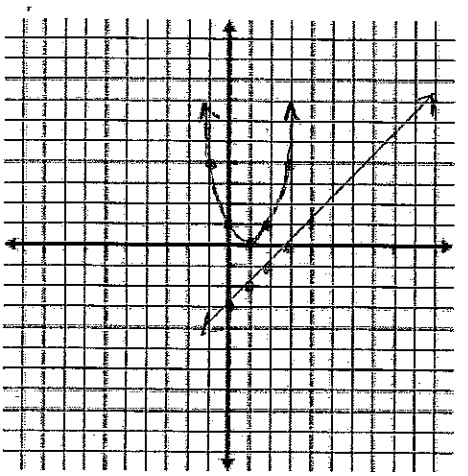
Solution

$y = 2x + 8$

$x \geq 2$

11. $y = (x-1)^2$ $V: (1,0)$

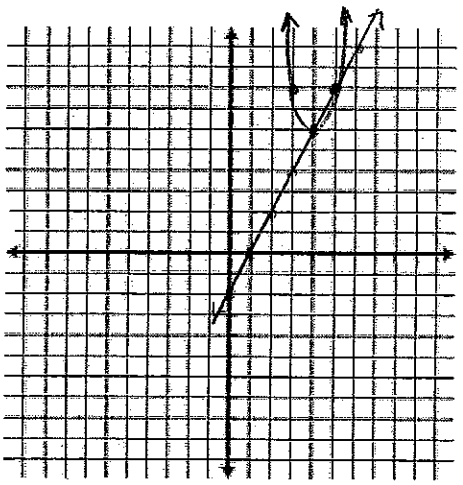
$y = x - 3$



No Solution

12. $y = 2x^2 - 16x + 38$ $x = \frac{16}{2(2)} = 4$

$y = 2x - 2$ $V: (4,6)$



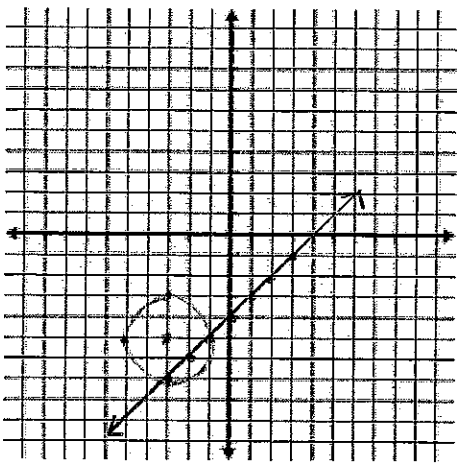
Solution

$(4,6)$

$(5,8)$

13. $(x+3)^2 + (y+5)^2 = 4$ $C: (-3,-5)$ $R: 2$

$-x + y = -4$ $y = x - 4$



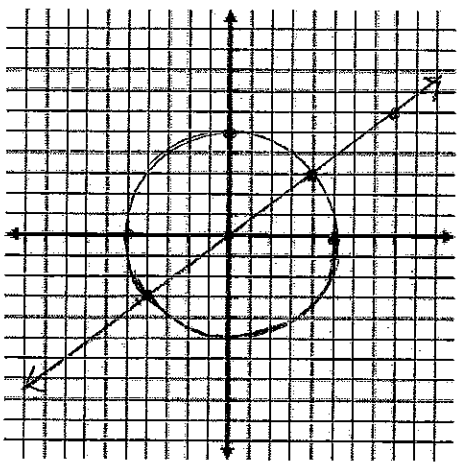
Solution

$(-1,-5)$

$(-3,-7)$

14. $x^2 + y^2 = 25$

$4y = 3x$ $y = \frac{3}{4}x$



Solution

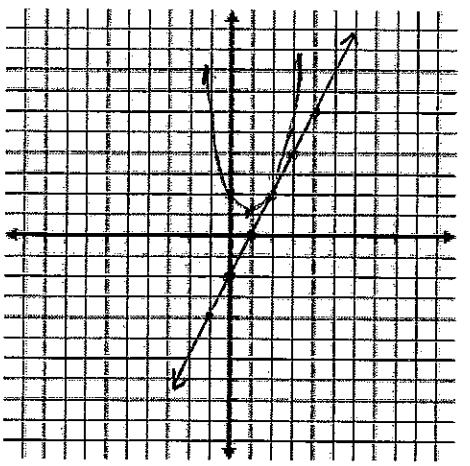
$(4,3)$

$(-4,-3)$

15. $y = x^2 - 2x + 2$ $x = \frac{2}{2(1)} = 1$ $V: (1,1)$

$y - 2x = -2$

$y = 2x - 2$

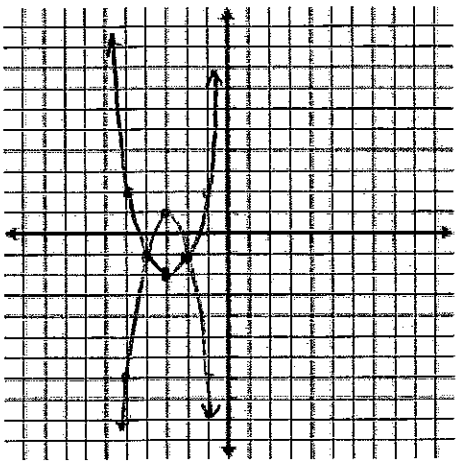


Solution

$(2,2)$

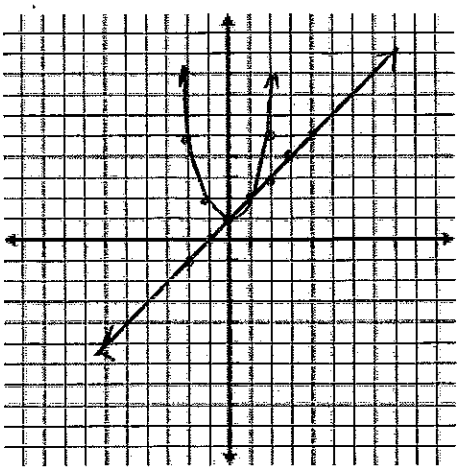
Day 5

16. $y = x^2 + 6x + 7$ V: $(-3,-2)$
$y = -2x^2 - 12x - 17$ V: $(-3, 1)$



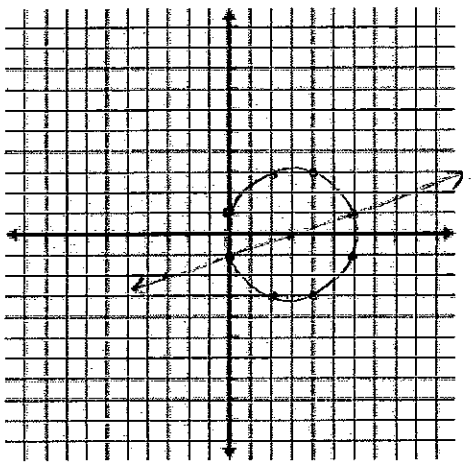
Solution
$(-4,-1)$
$(-2,-1)$

17. $y = x^2 + 1$
$y - x = 1$ $y = x + 1$



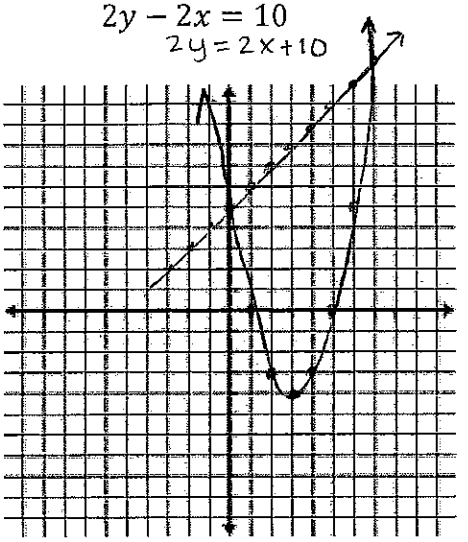
Solution
$(0,1)$
$(1,2)$

18. $(x-3)^2 + y^2 = 10$ C: $(3,0)$ R: $\sqrt{10}$
$x - 3y = 3$ $y = \frac{1}{3}x - 1$



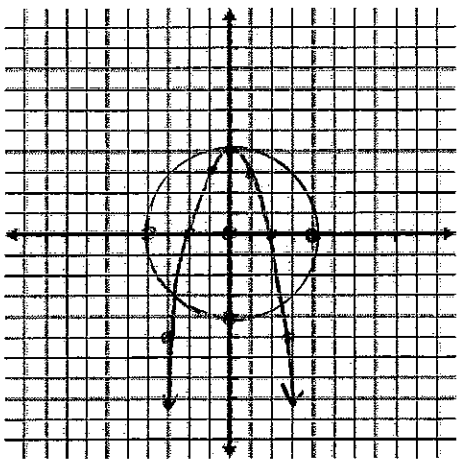
Solution
$(6,1)$
$(0,-1)$

19. $y = x^2 - 6x + 5$ V: $(3,-4)$
$2y - 2x = 10$ $y = x + 5$
$2y = 2x + 10$



Solution
$(0,5)$
$(7,12)$

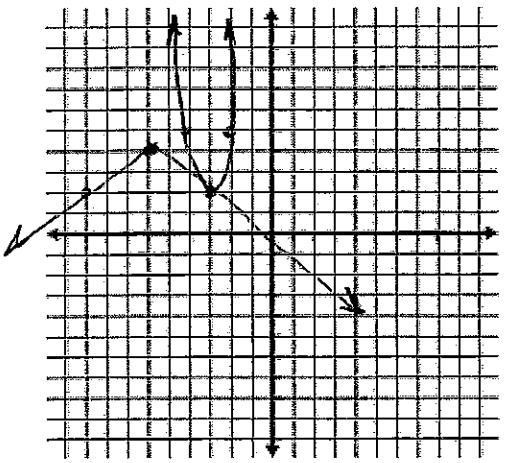
20. $x^2 + y^2 = 16$
$y = -x^2 + 4$



Solution
$(0,4)$
about
$(-3,-3)$
$(3,-3)$

$(-\sqrt{7},-3)$
$(\sqrt{7},-3)$

21. $y = \frac{-2}{3}|x+6| + 4$ $(-6,4)$
$y = 3x^2 + 18x + 29$ V: $(-3,2)$



Solution
$(-3,2)$