HW 3 - 3: Answers

HW Day 5 #1

2. {(-2, -3), (1, 3)}

4. $(x + 1)^2 + (y - 2)^2 = 9$

{(-4, 2), (2, 2)}

5. $(x - 2)^2 + (y + 3)^2 = 16$

{(2, 1), (-2, -3)}

Aug 13-9:18 AM

1. a. Solve graphically:

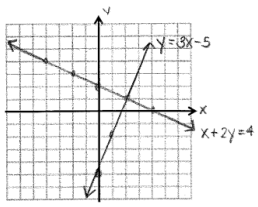
$x + 2y = 4 \rightarrow y = -\frac{1}{2}x + 2$

$-3x + y = -5 \quad y = 3x - 5$

$m = -1/2 \quad b = 2$

$m = 3 \quad b = -5$

$(2, 1)$



b. Solve the same system algebraically.

$3(x + 2y = 4)$

$-3x + y = -5$

$3x + 6y = 12$

$-3x + y = -5$

$7y = 7$

$y = 1$

$x + 2 = 4$

$x = 2$

$(2, 1)$

Aug 13-12:04 PM

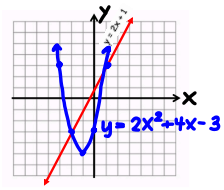
Solve graphically. Be sure to include all required parts.

HW 3-5 #1

$y = 2x + 1 \rightarrow m:$

$y = 2x^2 + 4x - 3 \quad b:$

x | y



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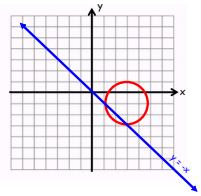
3. $(x-3)^2 + (y+1)^2 = 4$

$y = -x$

center: (3, -1)

radius 2

Answer: {(1, -1), (3, -3)}



Sep 9-8:49 PM

4. $x^2 + y^2 + 2x - 4y - 4 = 0$

$y = 2$

$x^2 + 2x + 1 + y^2 - 4y + 4 = 4 + 1 + 4$

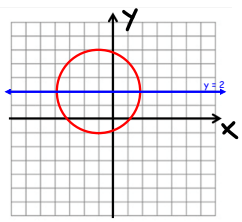
$(x + 1)^2 + (y - 2)^2 = 9$

center: (-1, 2)

radius: 3

Answer:

{(-4, 2), (2, 2)}



Oct 10-2:14 PM

5. $x^2 + y^2 - 4x + 6y - 3 = 0$

$x - y = 1$

$x^2 - 4x + 4 + y^2 + 6y + 9 = 3 + 4 + 9$

$(x - 2)^2 + (y + 3)^2 = 16$

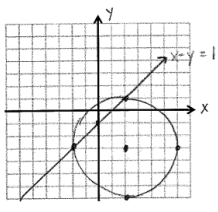
center $(2, -3)$

radius 4

$y = x - 1$

$m = 1$

$b = -1$



$\{(2, 1), (-2, -3)\}$

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U3D4

Solving Systems Algebraically

Aug 13-9:09 AM

Solve the two equations from yesterday algebraically.

Steps to consider:

1. Solve the linear equation for x or y.
2. Substitute into the circle (or parabola) equation.
3. Solve.
4. Substitute your answer into the linear equation to solve for the remaining variable.
5. Express your answer as points in solution ie {(2, 3), (-1, 4)}

Aug 13-11:10 AM

1. $x^2 + y^2 = 25$
   $4x + 3y = 0$

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2. $(x - 2)^2 + (y + 3)^2 = 4$
   $x - y = 3$

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Solve the systems algebraically:

3. $(x - 1)^2 + (y - 2)^2 = 4$
   $y = 2x + 2$

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4. $y = x^2 - 6x + 3$ (y_1)
   $y = 2x - 13$ (y_2)

$x^2 - 6x + 3 = 2x - 13$

$-2x + 13 \quad -2x + 13$

$x^2 - 8x + 16 = 0$

$(x - 4)(x - 4) = 0$

$x - 4 = 0 \quad | \quad x - 4 = 0$

$+4 \quad +4 \quad | \quad x = 4$

$x = 4$

$\{(4, -5)\}$

$y = 2x - 13$

$x = 4$

$y = 2(4) - 13$

$= 8 - 13 = -5$

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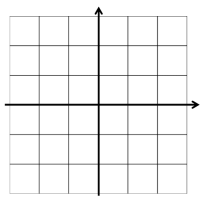
5. $x^2 + y^2 = 1$
$2y = x + 1$

(hint: only one solution can be obtained graphically. You must find the second solution algebraically)



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