Geometry Notes Section 12-7

Solving Systems by Graphing or Algebra

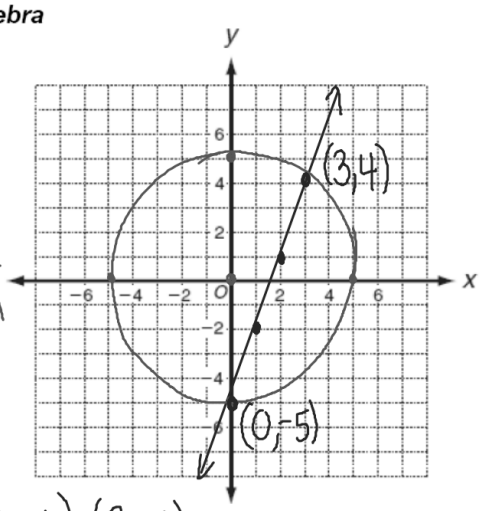
Solve the system by graphing.

$x^2 + y^2 = 25$ C(0,0) r=5

$-3x + y = -5$

$y = 3x - 5$ y-int -5

$m = \frac{3}{1} \frac{\text{rise}}{\text{run}}$



Ck

$-3(3) + 4 = -5$ T

$-3(0) + (-5) = -5$ T

Solutions (0,-5) (3,4)

Solve the system by algebra using substitution.

$(x+4)^2 + (y-3)^2 = 73$

$x = -1$

$(-1+4)^2 + (y-3)^2 = 73$

$9 + (y-3)^2 = 73$

$\sqrt{(y-3)^2} = \sqrt{64}$

$y - 3 = \pm 8$

$y = \pm 8 + 3 = 8+3 = 11$, $-8+3 = -5$

(-1, 11) (-1, -5)

Solve the system by algebra using substitution.

$x^2 + y^2 = 200$

$y = 7x$

$x^2 + (7x)^2 = 200$

$x^2 + 49x^2 = 200$

$50x^2 = 200$

$\sqrt{x^2} = \sqrt{4}$

$x = \pm 2$

$y = 7(2) = 14$

$y = 7(-2) = -14$

(2, 14) (-2, -14)