

NAME: Uqohwe Fortune

Dept: Mechanical Engr.

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~~1. $x^2 - 6x + y^2 + 8y = 0$
 $x(x-6) + y(y+8) = 0$
 $xy = 6$
for~~

1. $x^2 - 6x + y^2 + 8y = 0$

$x - y = 14 \Rightarrow 0$

$x^2 - 8x + y^2 + 8y = x - y - 14$

$x^2 - 7x + y^2 + 9y = -14$

$(x^2 - 7x + 42.25) + (y^2 + 9y + 20.25) = -14$

$(x - 3.5)^2 + (y + 4.5) = -14$

Intersection = $(-3.5, 4.5)$

2. $x^2 + y^2 + 4x - 6y = 2x + y$

$x^2 + 2x + y^2 - 7y = 0$

$(x^2 + 2x + 1) + (y^2 - 7y + 12.25) = 0$

$(x + 1)^2 + (y - 3.5) = 0$

Intersection = $(1, -3.5)$

3. $x^2 + 25y^2 - 6xy - 16 = x - 5y - 2$

$x^2 + 25y^2 - 6xy - x + 5y - 14 = 0$

$x^2 + y(25y - 6x) - x + 5y - 14 = 0$

$25y - 6x + 5y = 0$

$30y = 6x$

$5y = x$

Intersection = $(1, 5)$