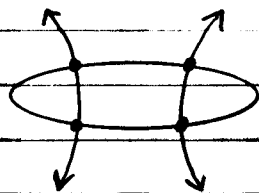


REINFORCED  
★★★

1.  $2x^2 + 5y^2 = 98 \rightarrow 2x^2 + 5y^2 = 98$

$-1(2x^2 - y^2 = 2) \rightarrow -2x^2 + y^2 = -2$

$6y^2 = 96$



$y^2 = 16$

$y = \pm 4$

$\{(3,4) (-3,4) (3,-4) (-3,-4)\}$



X	Y
±3	4
±3	-4

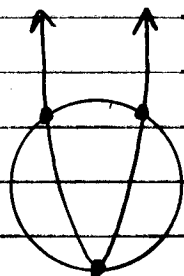
REINFORCED  
★★★

2.  $x^2 + y^2 = 25 \rightarrow x^2 + y^2 = 25$

$-1(x^2 - y = 5)$

$-x^2 + y = -5$

$y^2 + y = 20$



$y^2 + y - 20 = 0$

$(y - 4)(y + 5) = 0$

$y = 4, -5$



$\{(3,4) (-3,4) (0,-5)\}$

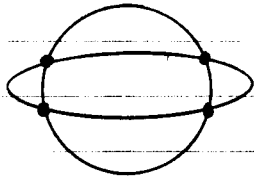
X	Y
±3	4
0	-5

REINFORCED  
★★★

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★

EINFOR  
★ ★ ★ ★

$$3. \quad \begin{aligned} X^2 + 2Y^2 &= 33 & \rightarrow & X^2 + 2Y^2 = 33 \\ -2(X^2 + Y^2 + 2X = 19) & & \rightarrow & -2X^2 - 2Y^2 - 4X = -38 \\ & & & \hline & & & -X^2 - 4X = -5 \end{aligned}$$



$$\begin{aligned} X^2 + 4X &= 5 \\ X^2 + 4X - 5 &= 0 \\ (X-1)(X+5) &= 0 \\ X &= 1, -5 \end{aligned}$$

{ (1, 4) (1, -4) (-5, 2) (-5, -2) }

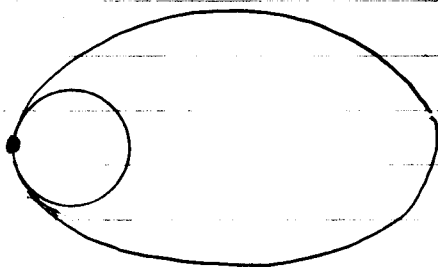


X	Y
1	±4
-5	±2

REINFORCED  
★ ★ ★ ★

REINFORCED  
★ ★ ★ ★

$$4. \quad \begin{aligned} -25(X^2 + Y^2 + 8X = -15) & \rightarrow -25X^2 - 25Y^2 - 200X = 375 \\ 9X^2 + 25Y^2 = 225 & \rightarrow 9X^2 + 25Y^2 = 225 \\ & \hline & -16X^2 - 200X = 600 \end{aligned}$$



$$\begin{aligned} 2X^2 + 25X &= -75 \\ 2X^2 + 25X + 75 &= 0 \\ (2X+15)(X+5) &= 0 \\ X &= -15/2, -5 \end{aligned}$$

{ (-5, 0) }



X	Y
-15/2	No Solution
-5	0

REINFORCED  
★ ★ ★ ★

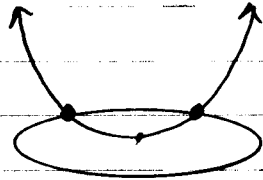
REINFORCED  
★ ★ ★ ★

REINFORCED  
★★★

5.  $5x^2 + 9y^2 = 161 \rightarrow 5x^2 + 9y^2 = 161$

$-5(x^2 - 4y = 4) \rightarrow -5x^2 + 20y = -20$

$9y^2 + 20y = 141$



$\{ (4, 3) (-4, 3) \}$

$9y^2 + 20y - 141 = 0$

$(9y + 47)(y - 3) = 0$

$y = -47/9, 3$



X	Y
No Solution	-47/9
± 4	3

REINFORCED  
★★★

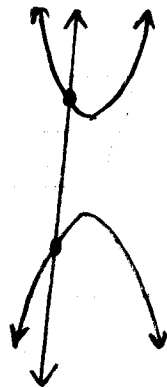
REINFORCED  
★★★

6.  $16x^2 - 3y^2 = -11$

$8x - y = -11$



$y = 8x + 11$



$\{ (-2, -5) (-1, 3) \}$

$16x^2 - 3(8x + 11)^2 = -11$

$16x^2 - 3(64x^2 + 176x + 121) =$

$16x^2 - 192x^2 - 528x - 363 = -$

$-176x^2 - 528x - 352 = 0$

$x^2 + 3x + 2 = 0$

$(x + 2)(x + 1) = 0$

$x = -2, -1$



X	Y
-2	-5
-1	3

REINFORCED  
★★★

REINFORCED  
★★★

D

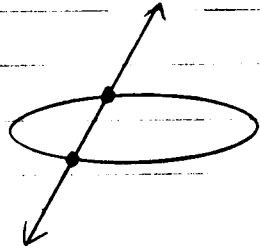
REINFORCED  
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7.  $X^2 + 9y^2 - 10X + 36y = 20$

$X - 3y = 2$

↓

$X = 2 + 3y$



$\{ (5, 1) (-4, -2) \}$

$(2+3y)^2 + 9y^2 - 10(2+3y) + 36y = 20$

$4 + 12y + 9y^2 + 9y^2 - 20 - 30y + 36y = 20$

$18y^2 + 18y - 36 = 0$

$y^2 + y - 2 = 0$

$(y-1)(y+2) = 0$

$y = 1, -2$

↓

X	Y
5	1
-4	-2

REINFORCED  
★★★★

REINFORCED  
★★★★

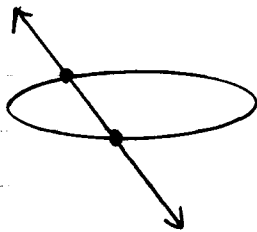
8.  $X^2 + 2y^2 = 33$

$3X + 2Y = -11$

↓

$2Y = -3X - 11$

$Y = -3/2X - 11/2$



$\{ (-5, 2) (-1, -4) \}$

$X^2 + 2(-3/2X - 11/2)^2 = 33$

$X^2 + 2(9/4X^2 + 66/4X + 121/4) = 33$

$X^2 + 9/2X^2 + 66/2X + 121/2 = 33$

$2X^2 + 9X^2 + 66X + 121 = 66$

$11X^2 + 66X + 55 = 0$

$X^2 + 6X + 5 = 0$

$(X+5)(X+1) = 0$

$X = -5, -1$

↓

X	Y
-5	2
-1	-4

REINFORCED  
★★★★

FORCED  
★★★