

## Ellipses: Writing in Standard Form

Use the information provided to write the standard form equation of each ellipse.

1)  $x^2 + 9y^2 - 14x - 72y + 112 = 0$

2)  $25x^2 + 9y^2 - 100x + 36y - 89 = 0$

3)  $9x^2 + y^2 - 54x + 8y + 61 = 0$

4)  $4x^2 + y^2 - 56x + 16y + 116 = 0$

5)  $9x^2 + 4y^2 + 144x - 24y + 288 = 0$

6)  $x^2 + 9y^2 + 2x - 108y + 289 = 0$

7)  $4x^2 + 16y^2 - 36x + 160y - 303 = 0$

8)  $16x^2 + 49y^2 - 192x + 98y - 159 = 0$

9)  $4x^2 + y^2 - 8x - 18y + 49 = 0$

10)  $4x^2 + y^2 - 20x - 4y - 71 = 0$

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Use the information provided to write the standard form equation of each ellipse.

1)  $x^2 + 9y^2 - 14x - 72y + 112 = 0$

$$\frac{(x-7)^2}{81} + \frac{(y-4)^2}{9} = 1$$

2)  $25x^2 + 9y^2 - 100x + 36y - 89 = 0$

$$\frac{(x-2)^2}{9} + \frac{(y+2)^2}{25} = 1$$

3)  $9x^2 + y^2 - 54x + 8y + 61 = 0$

$$\frac{(x-3)^2}{4} + \frac{(y+4)^2}{36} = 1$$

4)  $4x^2 + y^2 - 56x + 16y + 116 = 0$

$$\frac{(x-7)^2}{36} + \frac{(y+8)^2}{144} = 1$$

5)  $9x^2 + 4y^2 + 144x - 24y + 288 = 0$

$$\frac{(x+8)^2}{36} + \frac{(y-3)^2}{81} = 1$$

6)  $x^2 + 9y^2 + 2x - 108y + 289 = 0$

$$\frac{(x+1)^2}{36} + \frac{(y-6)^2}{4} = 1$$

7)  $4x^2 + 16y^2 - 36x + 160y - 303 = 0$

$$\frac{\left(x - \frac{9}{2}\right)^2}{196} + \frac{(y+5)^2}{49} = 1$$

8)  $16x^2 + 49y^2 - 192x + 98y - 159 = 0$

$$\frac{(x-6)^2}{49} + \frac{(y+1)^2}{16} = 1$$

9)  $4x^2 + y^2 - 8x - 18y + 49 = 0$

$$\frac{(x-1)^2}{9} + \frac{(y-9)^2}{36} = 1$$

10)  $4x^2 + y^2 - 20x - 4y - 71 = 0$

$$\frac{\left(x - \frac{5}{2}\right)^2}{25} + \frac{(y-2)^2}{100} = 1$$