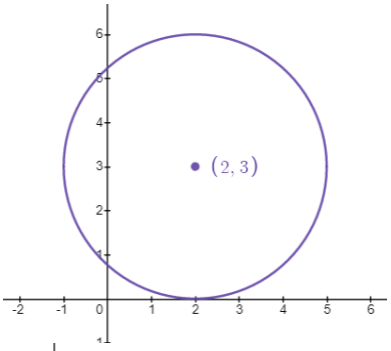
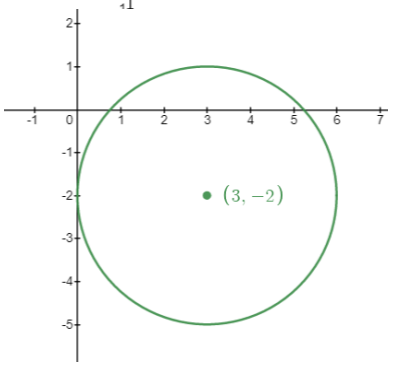
Circles

Complete the square to match each equation with the appropriate graph.

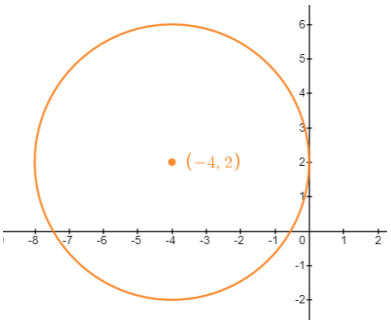
$x^2 + y^2 - 6x + 8y = 0$



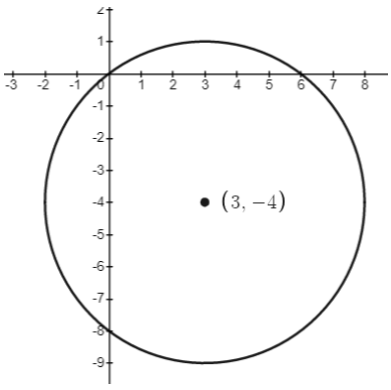
$x^2 + y^2 - 6x + 4y + 4 = 0$



$x^2 + y^2 - 4x - 6y + 4 = 0$



$x^2 + y^2 + 8x - 4y + 4 = 0$



Parabolas

Match each equation with the appropriate focus and directrix.

$x = -\frac{1}{12}(y+1)^2 - 2$

$y = \frac{1}{20}(x-3)^2 + 1$

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

$x = \frac{1}{16}y^2 + 4$

Focus (-2, -3)
Directrix: y = -1

Focus (8, 0)
Directrix: x = 0

Focus (-5, -1)
Directrix: x = 1

Focus (3, 6)
Directrix: y = -4

Ellipses

Match each equation with the appropriate foci.

$\frac{(x-3)^2}{16} + \frac{y^2}{9} = 1$

$\frac{(x+2)^2}{4} + \frac{(y-2)^2}{25} = 1$

$(x-5)^2 + \frac{(y+4)^2}{9} = 1$

$\frac{(x+1)^2}{49} + \frac{(y-2)^2}{36} = 1$

$(5, -4 \pm \sqrt{8})$

$(-1 \pm \sqrt{13}, 2)$

$(3 \pm \sqrt{7}, 0)$

$(-2, 2 \pm \sqrt{21})$

Hyperbolas

Match each equation with the appropriate asymptotes.

$$\frac{(x+3)^2}{25}-\frac{(y-1)^2}{9}=1$$

$$y=\pm\frac{4}{3}(x-1)-1$$

$$\frac{(y+3)^2}{25}-\frac{(x-1)^2}{16}=1$$

$$y=\pm\frac{3}{5}(x+3)+1$$

$$\frac{(y-3)^2}{16}-\frac{(x+1)^2}{25}=1$$

$$y=\pm\frac{4}{5}(x+1)+3$$

$$\frac{(x-1)^2}{9}-\frac{(y+1)^2}{16}=1$$

$$y=\pm\frac{5}{4}(x-1)-3$$

Conic Sections

Choose the correct conic section.

1. $7x^2 + 3x - 4y^2 + 2y - 6xy - 10 = 0$

2. $8xy + 13x - 6x^2 + 2y - 11 + y^2 + 23 = 0$

3. $x - 3x^2 + 2y - 14xy + 4y = 0$

4. $2x^2 - 5xy + 3x + 2y^2 - 6y + 12 = 0$