두 초점 F$(0, c)$ 이고 F$'(0, -c)$ 으로부터 거리의 합이 2$b$인 타원의 방정식을 구하여라.

(Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is 2$b$.)
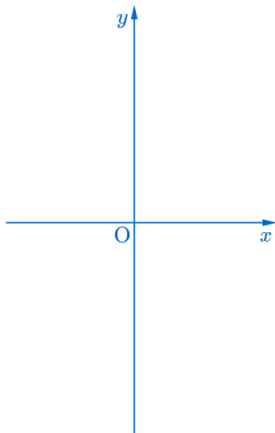
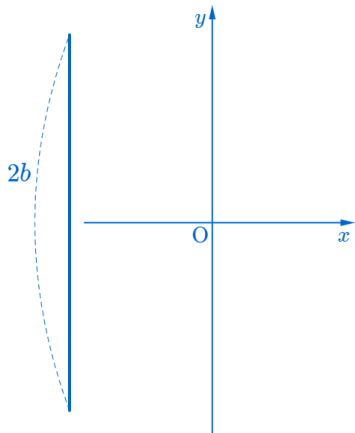Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is 2*b*.

Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.

Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is $2b$.

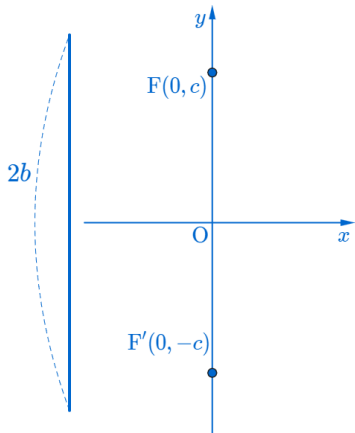Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is $2b$.

Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.

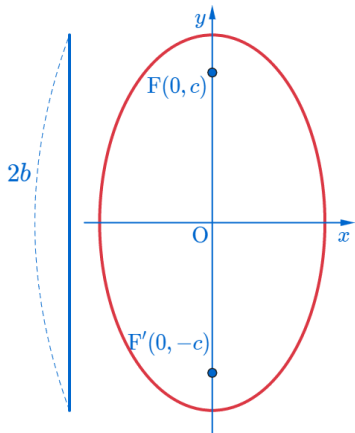Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is $2b$.

Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.

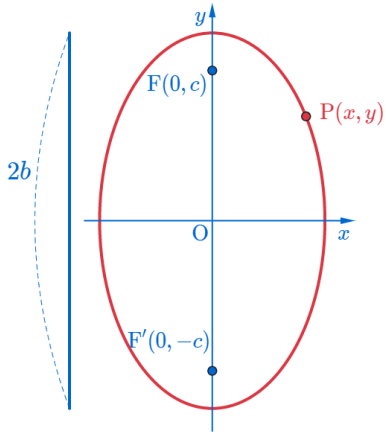Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.
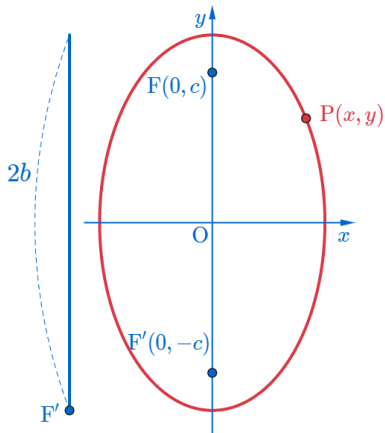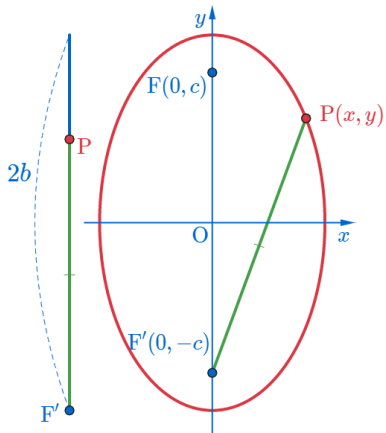
Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.

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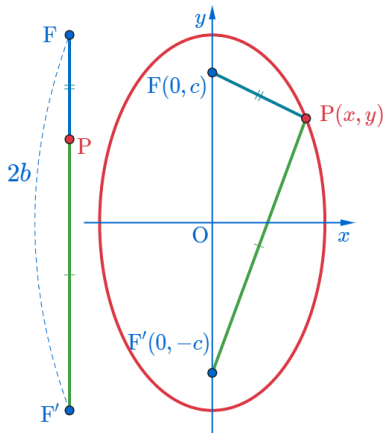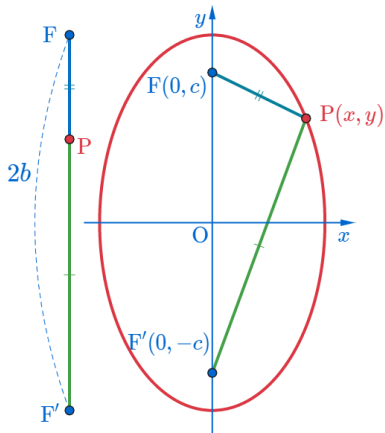$$\overline{PF} + \overline{PF'} = 2b$$

Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.



$$\overline{PF} + \overline{PF'} = 2b$$
$$\sqrt{(x-0)^2 + (y-c)^2} + \sqrt{(x-0)^2 + \{y-(-c)\}^2} = 2b$$

Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is 2b.
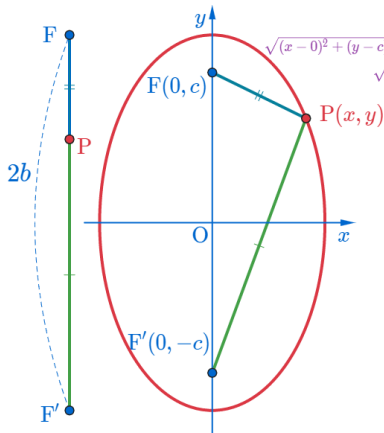


$$\overline{PF} + \overline{PF'} = 2b$$

$$\sqrt{(x-0)^2 + (y-c)^2} + \sqrt{(x-0)^2 + \{y-(-c)\}^2} = 2b$$
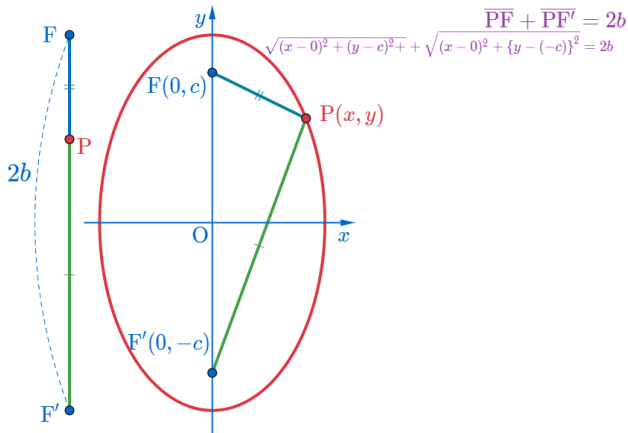
$$\sqrt{x^2 + (y-c)^2} + \sqrt{x^2 + (y+c)^2} = 2b$$

Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is 2$b$.



$$\overline{PF} + \overline{PF'} = 2b$$

$$\sqrt{(x-0)^2 + (y-c)^2} + \sqrt{(x-0)^2 + \{y-(-c)\}^2} = 2b$$

$$\sqrt{x^2 + (y-c)^2} + \sqrt{x^2 + (y+c)^2} = 2b$$

$$\sqrt{x^2 + (y-c)^2} = 2b - \sqrt{x^2 + (y+c)^2}$$

Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.



$$\overline{\mathrm{PF}} + \overline{\mathrm{PF'}} = 2b$$

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$$\sqrt{x^2 + (y-c)^2} + \sqrt{x^2 + (y+c)^2} = 2b$$

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$$x^2 + (y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + x^2 + (y+c)^2$$
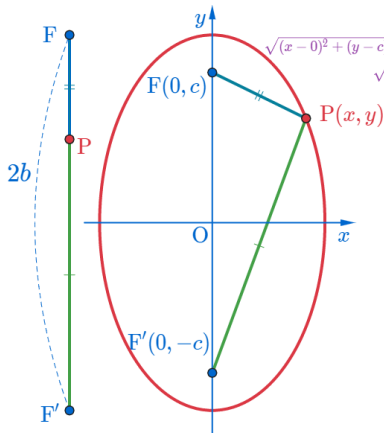
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$$(y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + (y+c)^2$$

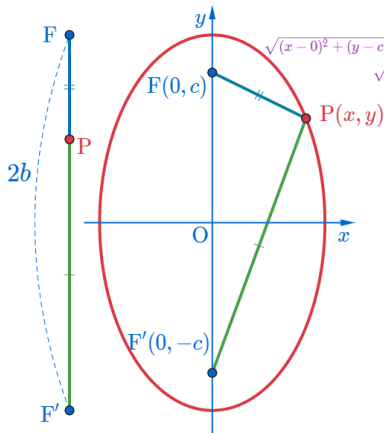Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.



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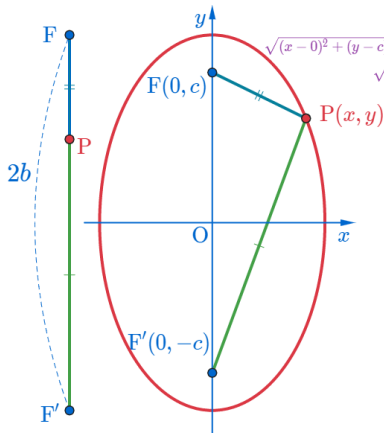
$$\sqrt{x^2 + (y-c)^2} + \sqrt{x^2 + (y+c)^2} = 2b$$

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$$x^2 + (y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + x^2 + (y+c)^2$$

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Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.



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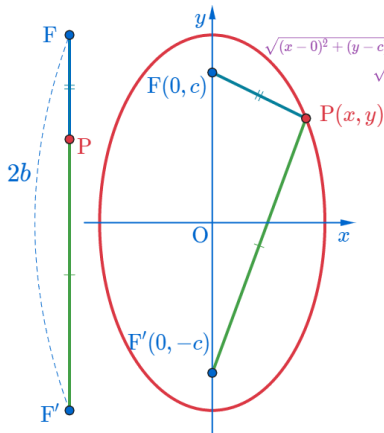$$\sqrt{(x-0)^2 + (y-c)^2} + \sqrt{(x-0)^2 + \{y-(-c)\}^2} = 2b$$

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$$x^2 + (y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + x^2 + (y+c)^2$$

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$$4b\sqrt{x^2 + (y+c)^2} = 4b^2 + (y+c)^2 - (y-c)^2$$

$$4b\sqrt{x^2 + (y+c)^2} = 4b^2 + 4cy$$

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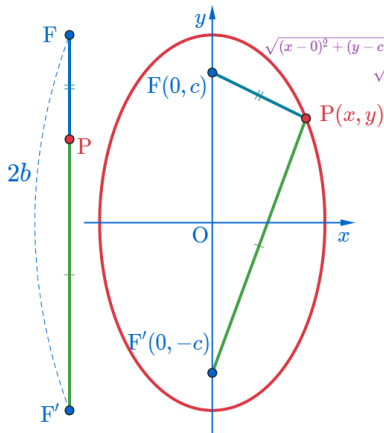$$x^2 + (y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + x^2 + (y+c)^2$$

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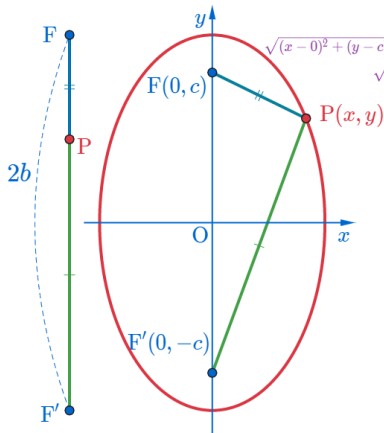$$\sqrt{x^2 + (y-c)^2} = 2b - \sqrt{x^2 + (y+c)^2}$$

$$x^2 + (y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + x^2 + (y+c)^2$$

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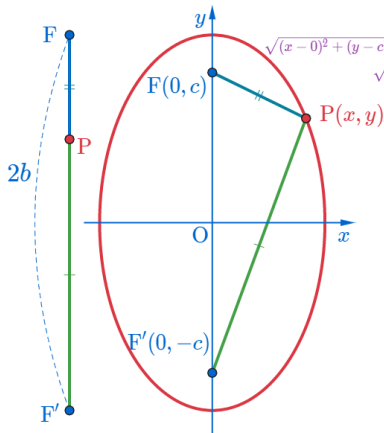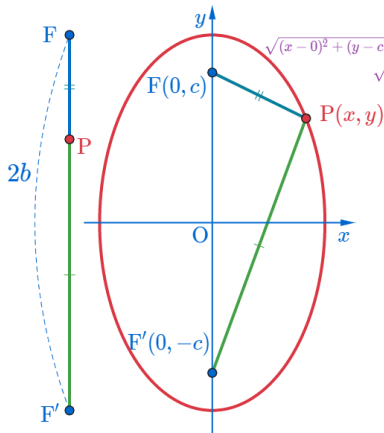$$(y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + (y+c)^2$$

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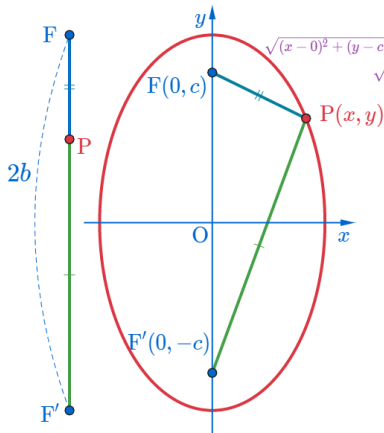


$$\overline{PF} + \overline{PF'} = 2b$$

$$\sqrt{(x-0)^2 + (y-c)^2} + \sqrt{(x-0)^2 + \{y-(-c)\}^2} = 2b$$

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$$b^2x^2 + b^2y^2 + b^2c^2 = b^4 + c^2y^2$$

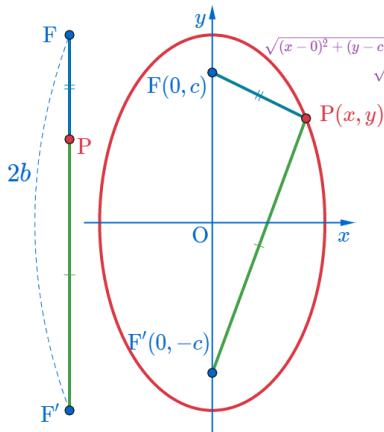Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.



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$$b^2x^2 + b^2y^2 + 2cb^2y + b^2c^2 = b^4 + 2b^2cy + c^2y^2$$

$$b^2x^2 + b^2y^2 + b^2c^2 = b^4 + c^2y^2$$

$$b^2x^2 + b^2y^2 - c^2y^2 = b^4 - b^2c^2$$

Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.



$$\overline{PF} + \overline{PF'} = 2b$$

$$\sqrt{(x-0)^2 + (y-c)^2} + \sqrt{(x-0)^2 + \{y - (-c)\}^2} = 2b$$

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$$4b\sqrt{x^2 + (y+c)^2} = 4b^2 + 4cy$$

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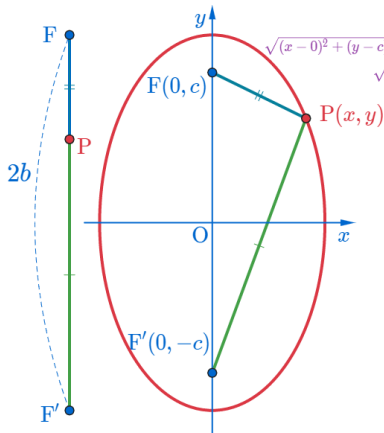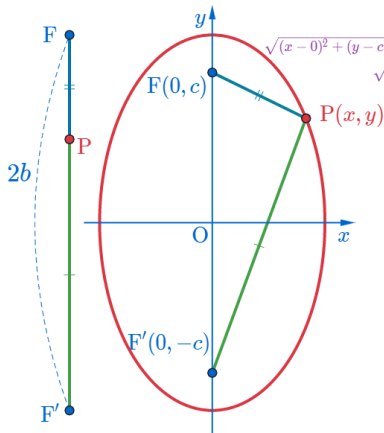$$b^2(x^2 + y^2 + 2cy + c^2) = b^4 + 2bcy + c^2y^2$$

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$$b^2x^2 + b^2y^2 - c^2y^2 = b^4 - b^2c^2$$

$$b^2x^2 + (b^2 - c^2)y^2 = b^2(b^2 - c^2)$$

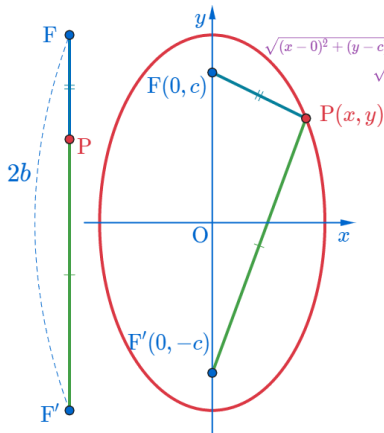Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is 2b.



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$$b^2x^2 + b^2y^2 - c^2y^2 = b^4 - b^2c^2$$

$$b^2x^2 + (b^2 - c^2)y^2 = b^2(b^2 - c^2)$$

Let $a^2 = b^2 - c^2$

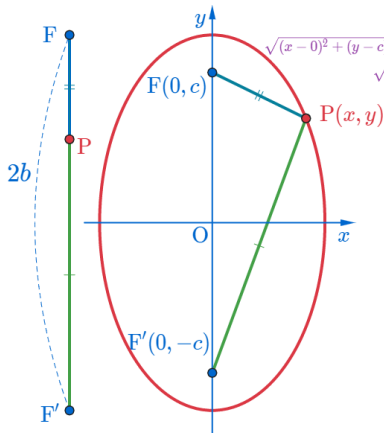Find the equation of the ellipse where the sum of the distances from F$(0, -c)$ and F$'(0, -c)$ is 2b.



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$$b^2x^2 + b^2y^2 - c^2y^2 = b^4 - b^2c^2$$

$$b^2x^2 + (b^2 - c^2)y^2 = b^2(b^2 - c^2)$$

Let $a^2 = b^2 - c^2$    $b^2x^2 + a^2y^2 = a^2b^2$

# Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.



$$\overline{PF} + \overline{PF'} = 2b$$

$$\sqrt{(x-0)^2 + (y-c)^2} + \sqrt{(x-0)^2 + \{y-(-c)\}^2} = 2b$$

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$$(y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + (y+c)^2$$

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$$b^2x^2 + b^2y^2 + 2cb^2y + b^2c^2 = b^4 + 2b^2cy + c^2y^2$$

$$b^2x^2 + b^2y^2 + b^2c^2 = b^4 + c^2y^2$$

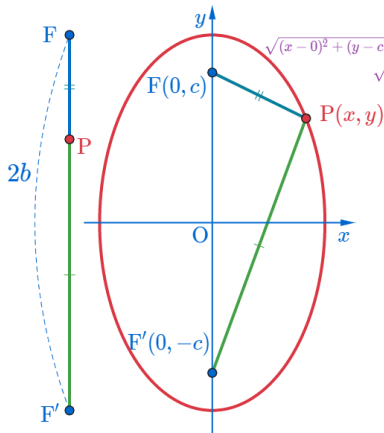$$b^2x^2 + b^2y^2 - c^2y^2 = b^4 - b^2c^2$$

$$b^2x^2 + (b^2 - c^2)y^2 = b^2(b^2 - c^2)$$

Let $a^2 = b^2 - c^2$    $b^2x^2 + a^2y^2 = a^2b^2$

$$\therefore \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$$

Find the equation of the ellipse where the sum of the distances from $F(0, -c)$ and $F'(0, -c)$ is $2b$.



$$\overline{PF} + \overline{PF'} = 2b$$

$$\sqrt{(x-0)^2 + (y-c)^2} + \sqrt{(x-0)^2 + \{y-(-c)\}^2} = 2b$$

$$\sqrt{x^2 + (y-c)^2} + \sqrt{x^2 + (y+c)^2} = 2b$$

$$\sqrt{x^2 + (y-c)^2} = 2b - \sqrt{x^2 + (y+c)^2}$$

$$x^2 + (y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + x^2 + (y+c)^2$$

$$(y-c)^2 = 4b^2 - 4b\sqrt{x^2 + (y+c)^2} + (y+c)^2$$

$$4b\sqrt{x^2 + (y+c)^2} = 4b^2 + (y+c)^2 - (y-c)^2$$

$$4b\sqrt{x^2 + (y+c)^2} = 4b^2 + 4cy$$

$$b\sqrt{x^2 + (y+c)^2} = b^2 + cy$$

$$b^2(x^2 + y^2 + 2cy + c^2) = b^4 + 2bcy + c^2y^2$$

$$b^2x^2 + b^2y^2 + 2cb^2y + b^2c^2 = b^4 + 2b^2cy + c^2y^2$$

$$b^2x^2 + b^2y^2 + b^2c^2 = b^4 + c^2y^2$$

$$b^2x^2 + b^2y^2 - c^2y^2 = b^4 - b^2c^2$$

$$b^2x^2 + (b^2 - c^2)y^2 = b^2(b^2 - c^2)$$

Let $a^2 = b^2 - c^2$ $\quad b^2x^2 + a^2y^2 = a^2b^2$

$$\therefore \frac{x^2}{a^2} + \frac{y^2}{b^2} = 1 \quad (b > c > 0, \ a^2 = b^2 - c^2)$$

Github:
https://min7014.github.io/math20200423001.html

Click or paste URL into the URL search bar, and you can see a picture moving.