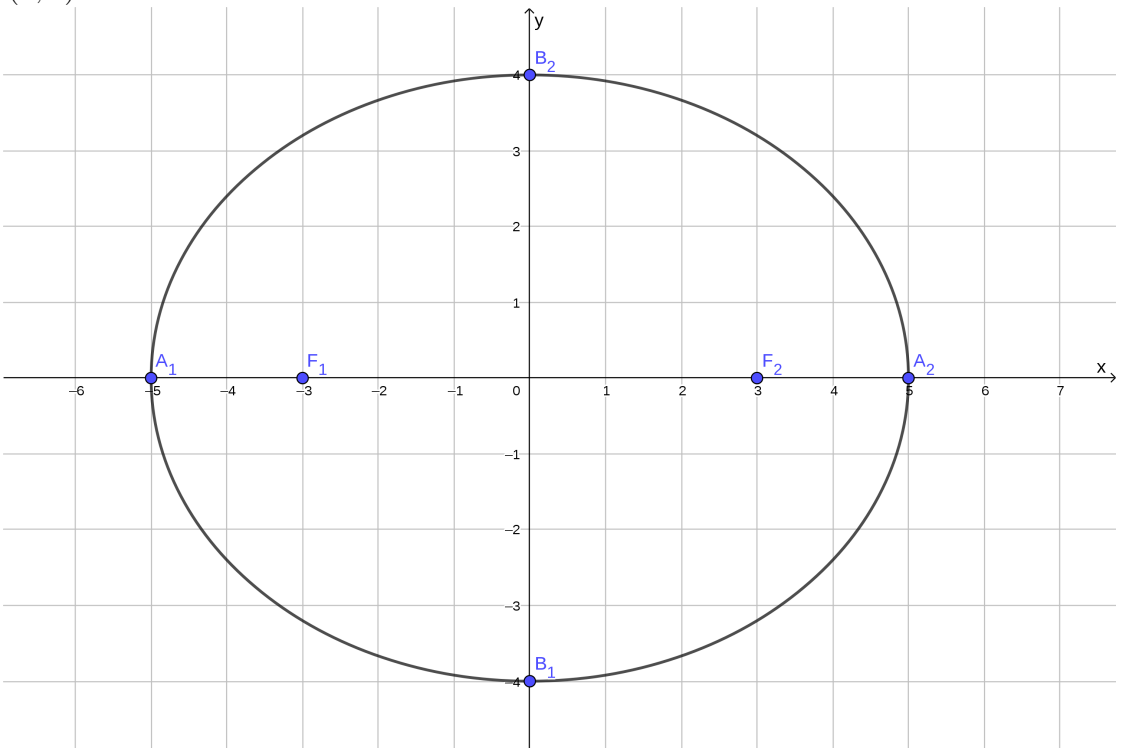
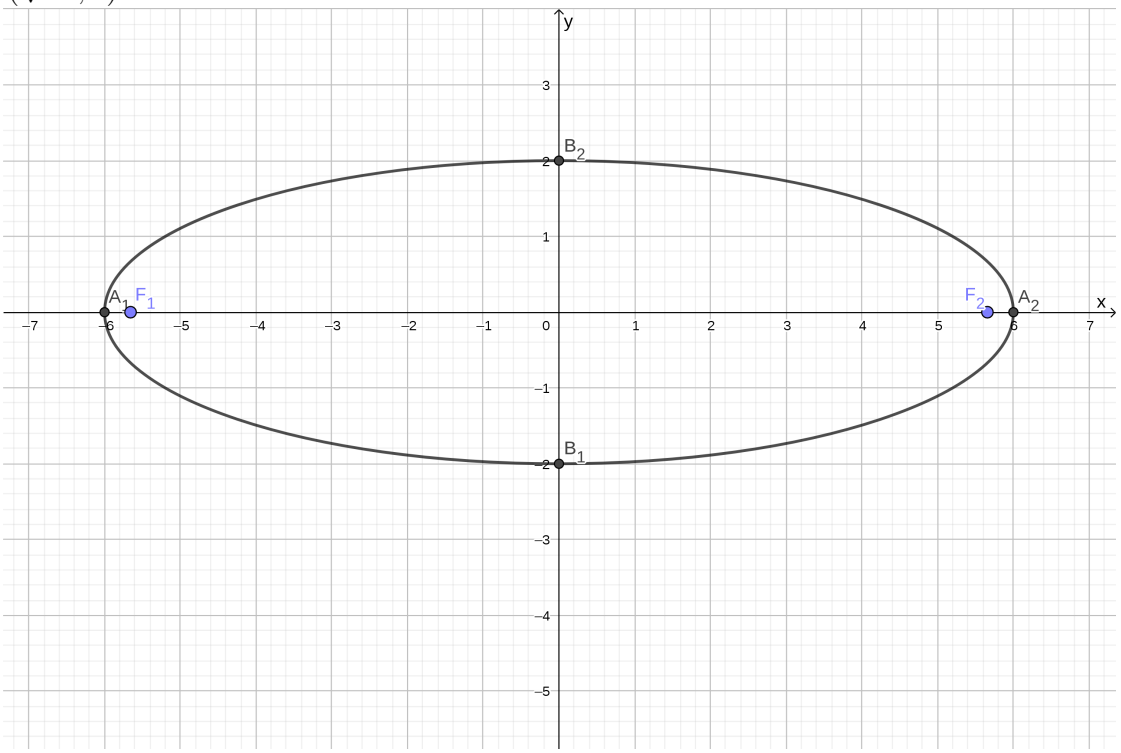
MAT01191 – Vetores e Geometria Analítica – Professora Miriam Telichevesky
Lista de Exercícios 11 – Gabarito

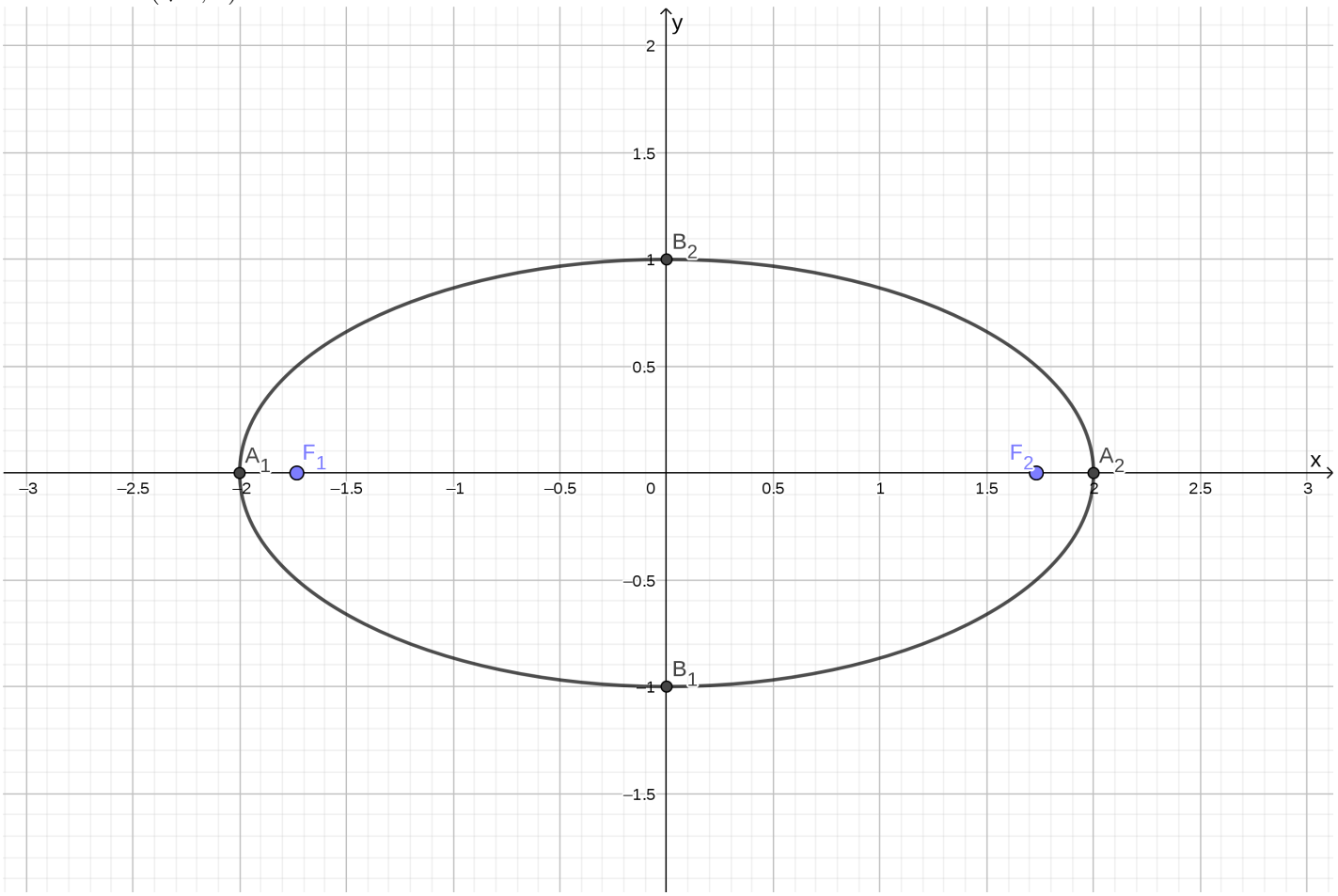
1. (a) Vértices: $A_1 = (-5, 0), A_2 = (5, 0), B_1 = (0, -4), B_2 = (0, 4)$, Focos: $F_1 = (-3, 0), F_2 = (3, 0)$.



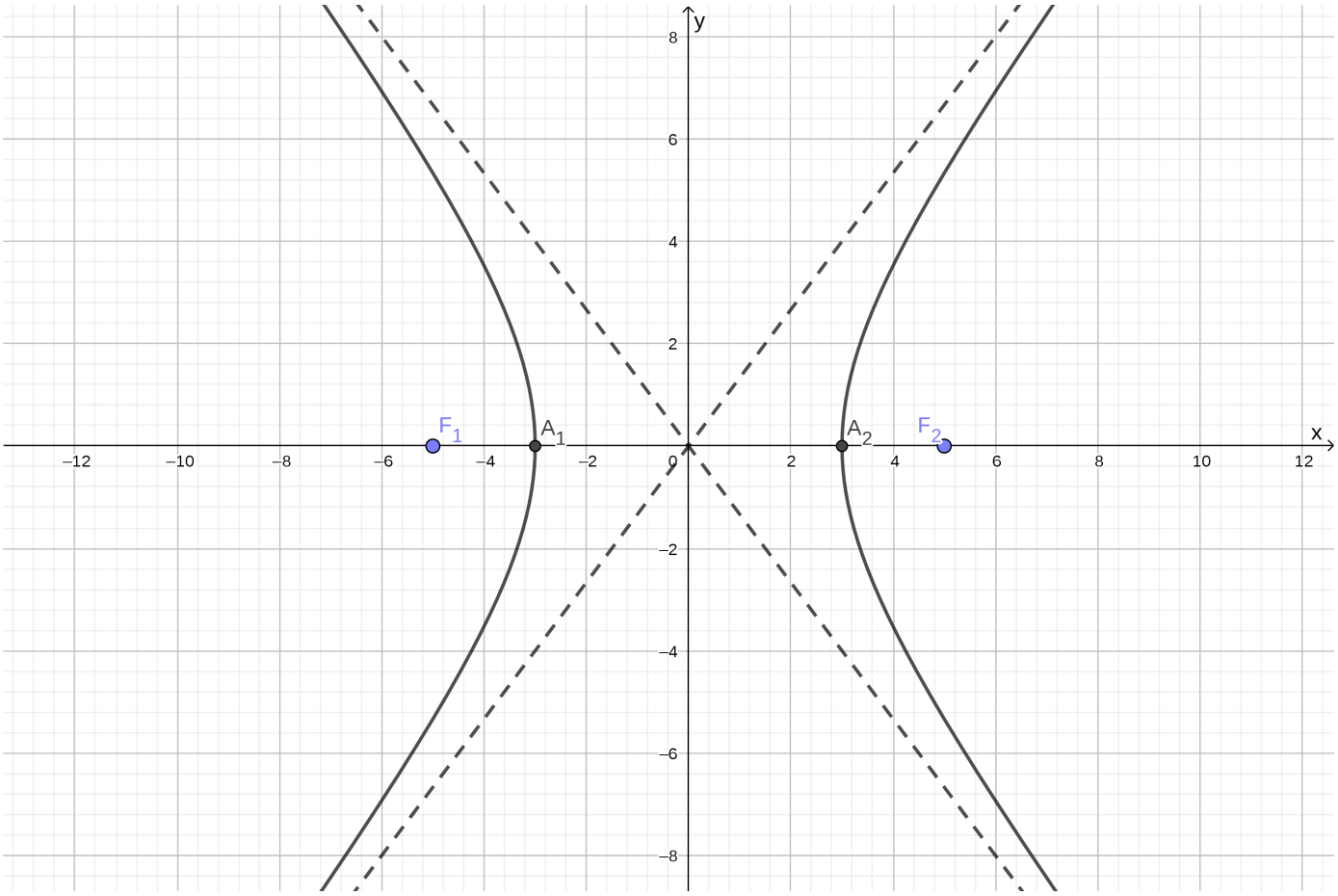
(b) Vértices: $A_1 = (-6, 0), A_2 = (6, 0), B_1 = (0, -2), B_2 = (0, 2)$, Focos: $F_1 = (-\sqrt{32}, 0), F_2 = (\sqrt{32}, 0)$.



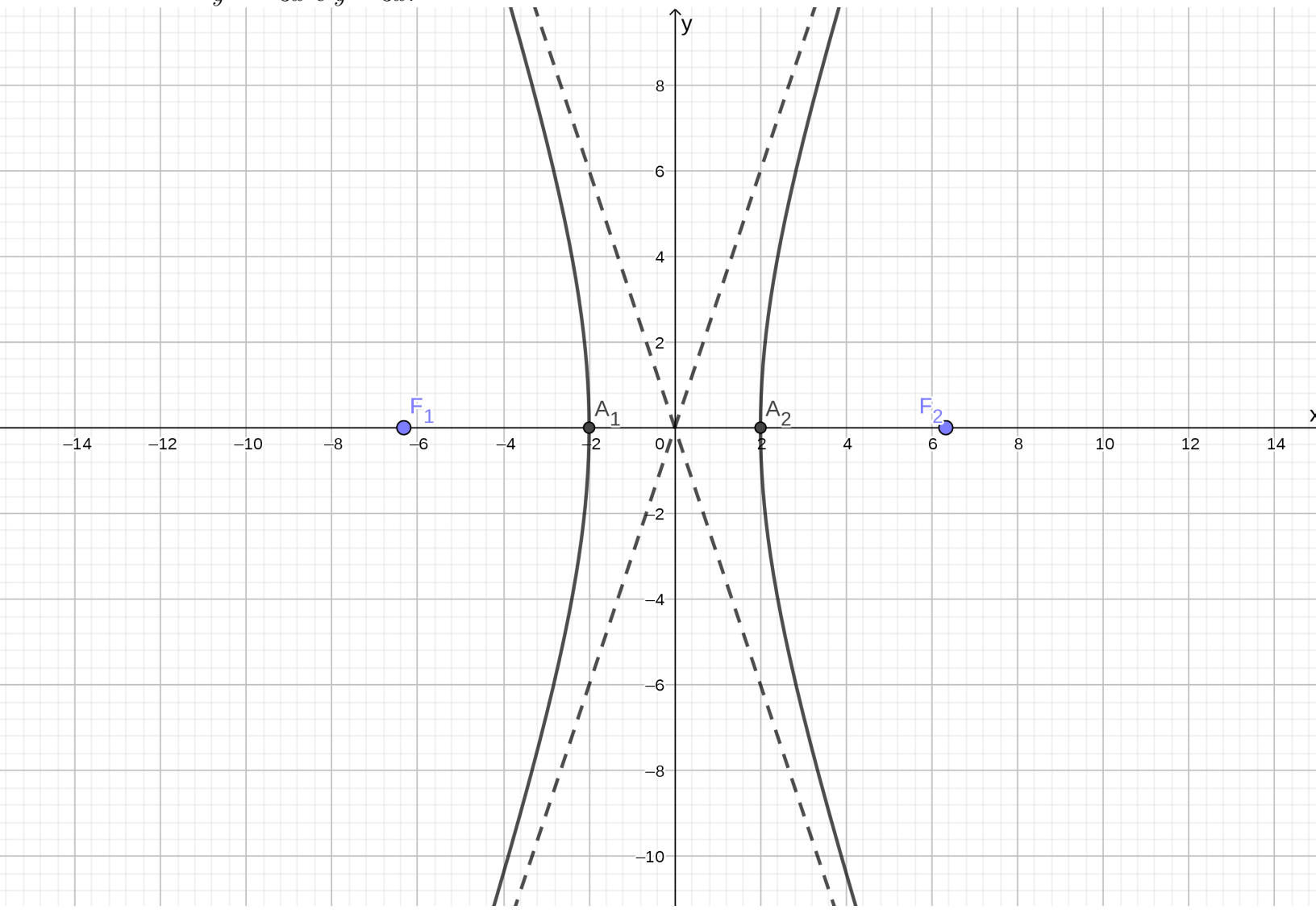
(c) Vértices: $A_1 = (-2, 0), A_2 = (2, 0), B_1 = (0, -1), B_2 = (0, 1)$, Focos: $F_1 = (-\sqrt{3}, 0), F_2 = (\sqrt{3}, 0)$.



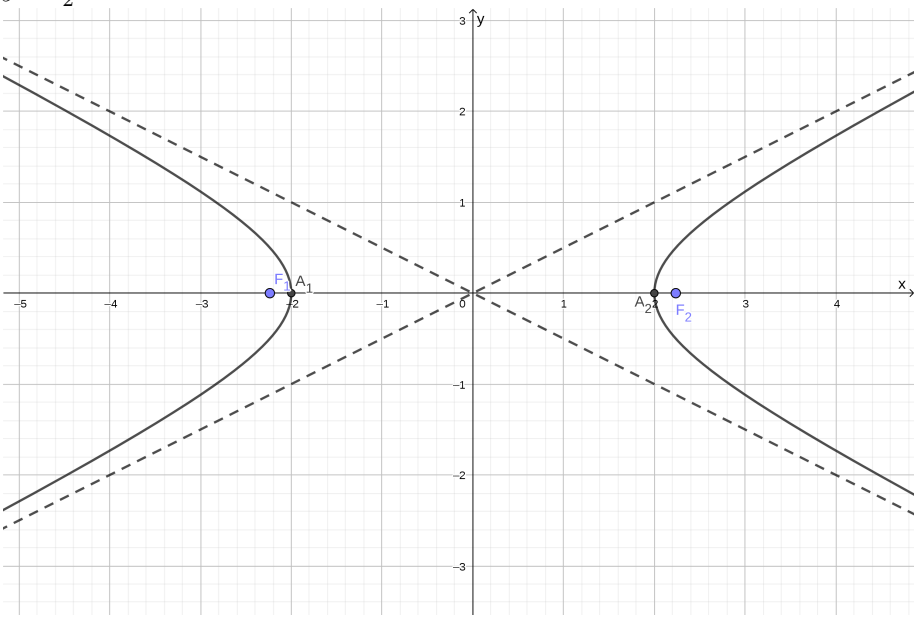
2. (a) Vértices: $A_1 = (-3, 0), A_2 = (3, 0)$, Focos: $F_1 = (-5, 0), F_2 = (5, 0)$, Assíntotas: $y = -\frac{4}{3}x$ e $y = \frac{4}{3}x$.


y
x
F1
A1
A2
F2
8
6
4
2
0
−2
−4
−6
−8
−12
−10
−8
−6
−4
−2
2
4
6
8
10
12

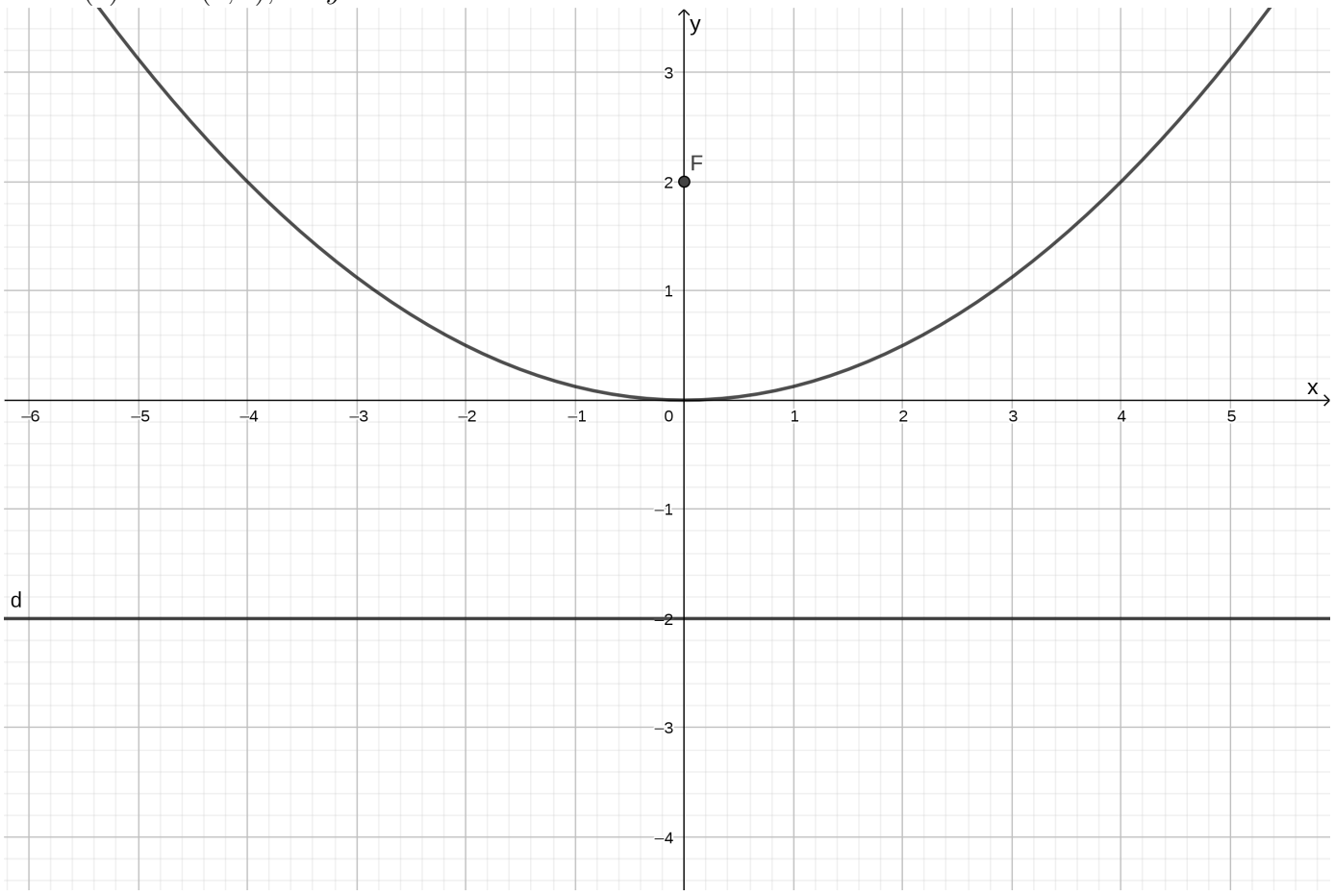
(b) Vértices: $A_1 = (-2, 0), A_2 = (2, 0)$, Focos: $F_1 = (-\sqrt{40}, 0), F_2 = (\sqrt{40}, 0)$, Assíntotas: $y = -3x$ e $y = 3x$.



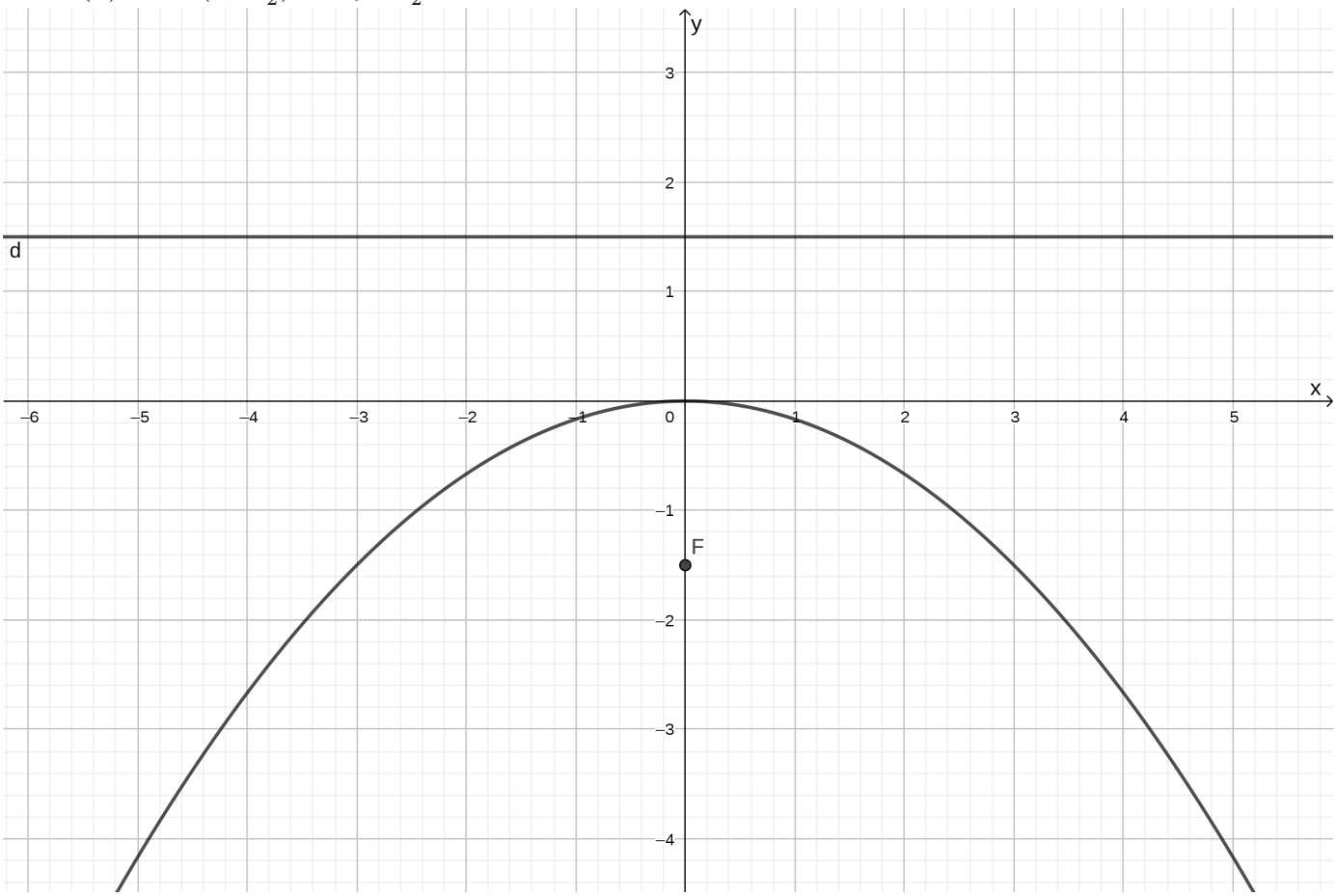
(c) Vértices: $A_1 = (-2, 0), A_2 = (2, 0)$, Focos: $F_1 = (-\sqrt{5}, 0), F_2 = (\sqrt{5}, 0)$, Assíntotas: $y = -\frac{1}{2}x$ e $y = \frac{1}{2}x$.



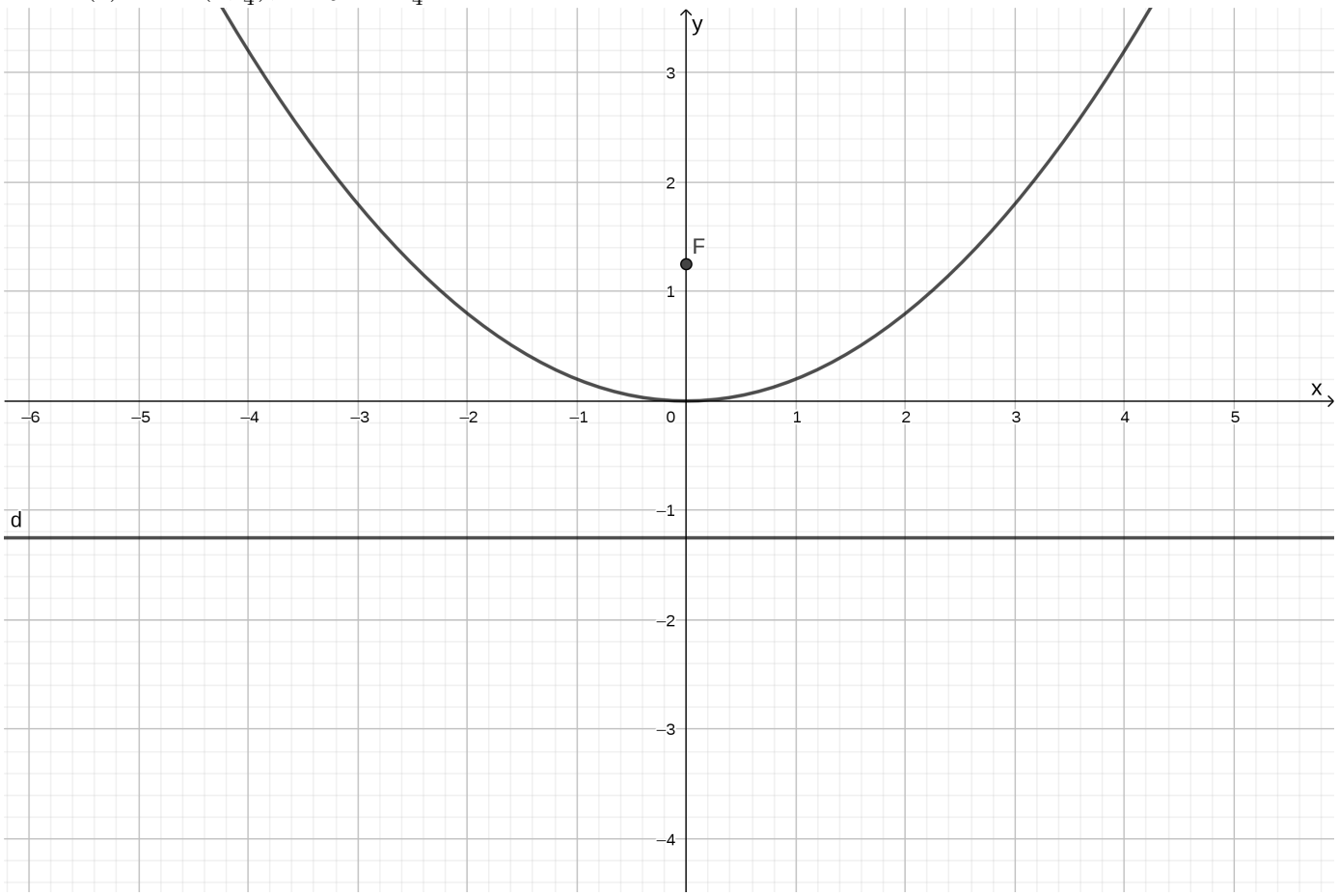
3. (a) $F = (0, 2)$, $d : y = -2$.



(b) $F = (0, -\frac{3}{2})$, $d : y = \frac{3}{2}$.



(c) $F = (0, \frac{5}{4})$, $d : y = -\frac{5}{4}$



4. (a) $x^2 = -\frac{3}{4}y$. Parábola com $p = -\frac{3}{16}$.

   (b) $\dfrac{x^2}{81} + \dfrac{y^2}{36} = 1$. Elipse com $a = 9$, $b = 6$ e $c = \sqrt{45}$.

   (c) $x^2 - y^2 = 1$. Hipérbole com $a = b = 1$ e $c = \sqrt{2}$.

   (d) $x^2 + \dfrac{y^2}{5} = 1$. Elipse com focos estão sobre o eixo y, com $a = 5$, $b = 1$ e $c = \sqrt{24}$.

   (e) $x^2 = \frac{1}{4}y$. Parábola com $p = \frac{1}{16}$.