

$$1. \vec{F}(x, y) = y \vec{i} + 2x \vec{j}$$

$$\|\vec{F}\| = \sqrt{y^2 + (2x)^2}$$

$$= \sqrt{y^2 + 4x^2}$$

$$\sqrt{y^2 + 4x^2} = C$$

$$y^2 + 4x^2 = C^2$$

$$\underline{C=2}$$

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

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

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

$$\underline{C=4}$$

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

$$y^2 + 4x^2 = 16$$

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

$$\underline{C=2}$$

$$(0, 2)$$

$$(1, 0)$$

$$(-1, 0)$$

$$(0, -2)$$

$$\underline{\vec{F}}$$

$$\vec{F} = 2\vec{i}$$

$$\vec{F} = 2\vec{j}$$

$$\vec{F} = -2\vec{j}$$

$$\vec{F} = -2\vec{i}$$

$$\underline{C=4}$$

$$(0, 4)$$

$$(0, -4)$$

$$(2, 0)$$

$$(-2, 0)$$

$$\underline{\vec{F}}$$

$$\vec{F} = 4\vec{i}$$

$$\vec{F} = -4\vec{i}$$

$$\vec{F} = 4\vec{j}$$

$$\vec{F} = -4\vec{j}$$

