1.

Which of these functions represent the graphed vector field?

(a) $F(x, y) = (x, y)$
(b) $F(x, y) = (x, -y)$
(c) $F(x, y) = (-y, x)$
(d) $F(x, y) = (y, x)$
(e) None

![Graph of vector field]
The path \( c(t) = (\cos(t), \sin(t)) \) is a flow line for which of these vector fields?

(a) \( F(x, y) = (\cos(x), \sin(y)) \)

(b) \( F(x, y) = (x, -y) \)

(c) \( F(x, y) = (-\sin(x), \cos(y)) \)

(d) \( F(x, y) = (-y, x) \)

(e) None of these are correct.
If $F(x, y)$ is a gradient field (i.e., $F = \nabla f$ for some function $f$), then what do the flow lines of $F$ represent? (Explain this to your neighbor.)