

Math 54 Quiz 20
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1. Let A be a 2×2 matrix with eigenvalues λ_1 and λ_2 . Match each condition on the matrix A with the corresponding direction field for the system $\mathbf{x}' = A\mathbf{x}$.
 - (a) $\text{Tr}(A)^2 < 4 \det(A)$.
 - (b) $\text{Tr}(A)^2 = 4 \det(A)$.
 - (c) $\text{Tr}(A) < 0$, $\det(A) > 0$, and $\lambda_1, \lambda_2 \in \mathbb{R}$.
 - (d) $\lambda_1 > 0$, $\lambda_2 < 0$.