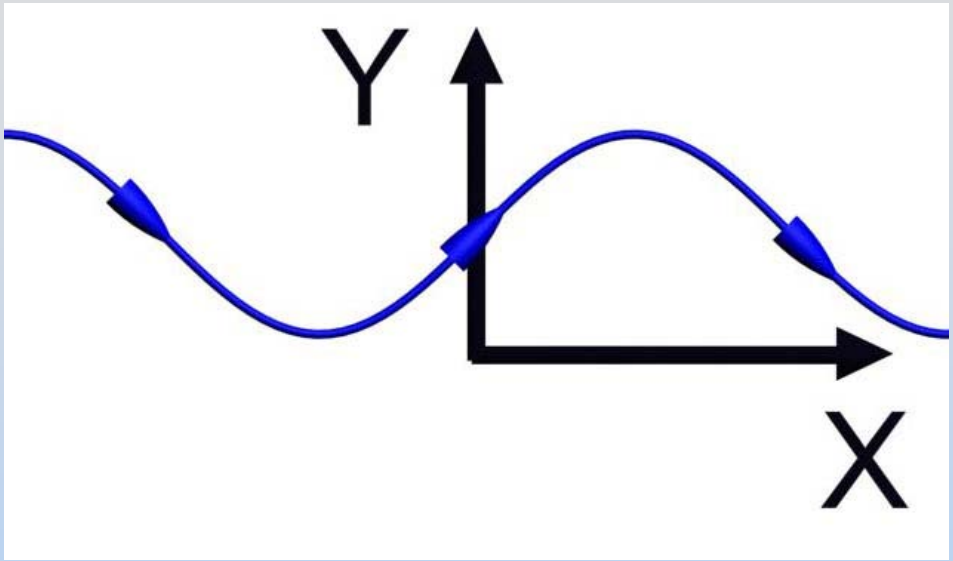
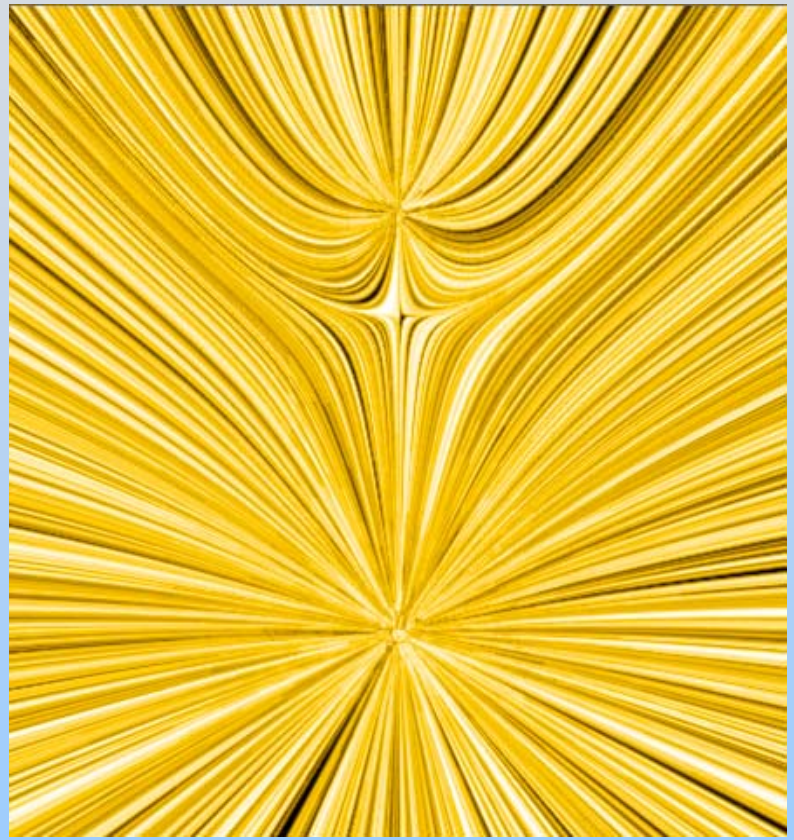
Concept Question: Vector Field



The field line at left corresponds to the vector field:

1. $\vec{\mathbf{F}}(x,y) = \sin(x)\,\hat{\mathbf{i}} + \hat{\mathbf{j}}$
2. $\vec{\mathbf{F}}(x,y) = \hat{\mathbf{i}} + \sin(x)\,\hat{\mathbf{j}}$
3. $\vec{\mathbf{F}}(x,y) = \cos(x)\,\hat{\mathbf{i}} + \hat{\mathbf{j}}$
4. $\vec{\mathbf{F}}(x,y) = \hat{\mathbf{i}} + \cos(x)\,\hat{\mathbf{j}}$
5. I don't know

Concept Question: Grass Seeds



The vector field at left is created by:

1. Two sources (equal strength)
2. Two sources (top stronger)
3. Two sources (bottom stronger)
4. Source & Sink (equal strength)
5. Source & Sink (top stronger)
6. Source & Sink (bottom stronger)
7. I don't know

Concept Question: Grass Seeds

Here there is an initial downward flow.

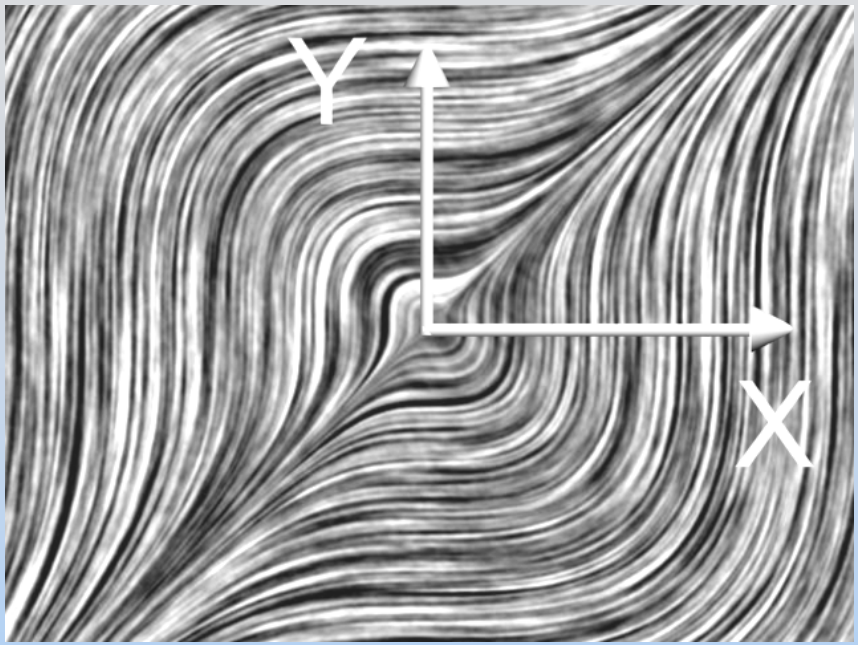
1. The point is a source
2. The point is a sink
3. I don’t know

Concept Question: Circulation

These two circulations are in:

1. The same direction (e.g. both clockwise)
2. Opposite directions (e.g. one cw, one ccw)
3. I don't know

Concept Question: Vector Field

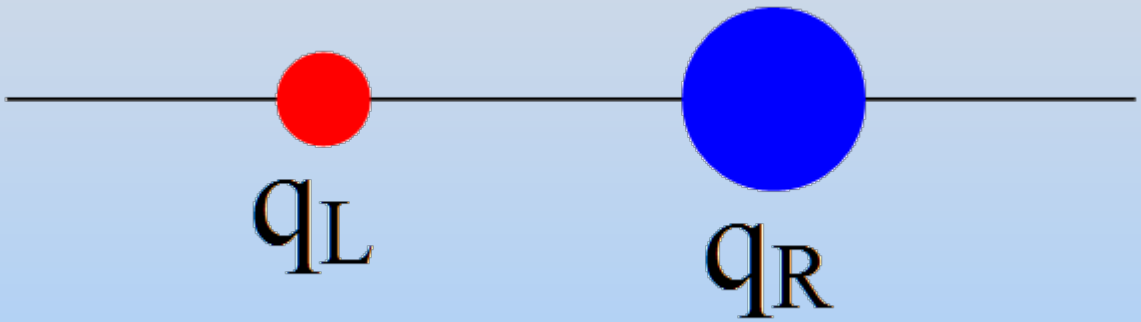


The grass seeds field plot at left is a representation of the vector field:

1. $\vec{\mathbf{F}}(x,y) = x^2\hat{\mathbf{i}} + y^2\hat{\mathbf{j}}$
2. $\vec{\mathbf{F}}(x,y) = y^2\hat{\mathbf{i}} + x^2\hat{\mathbf{j}}$
3. $\vec{\mathbf{F}}(x,y) = \sin(x)\hat{\mathbf{i}} + \cos(y)\hat{\mathbf{j}}$
4. $\vec{\mathbf{F}}(x,y) = \cos(x)\hat{\mathbf{i}} + \sin(y)\hat{\mathbf{j}}$
5. I don't know

Concept Question: Electric Field

Two opposite charges are placed on a line as shown below. The charge on the right is three times larger than the charge on the left. Other than at infinity, where is the electric field zero?



1. Between the two charges
2. To the right of the charge on the right
3. To the left of the charge on the left
4. The electric field is nowhere zero
5. Not enough info – need to know which is positive
6. I don't know

8.02SC Physics II: Electricity and Magnetism

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