## Problems: Normal Form of Green's Theorem

Use geometric methods to compute the flux of  $\mathbf{F}$  across the curves C indicated below, where the function g(r) is a function of the radial distance r.

**1**.  $\mathbf{F} = g(r)\langle x, y \rangle$  and *C* is the circle of radius *a* centered at the origin and traversed in a clockwise direction.

- **2**.  $\mathbf{F} = g(r)\langle -y, x \rangle$ ; *C* as above.
- **3**. **F** = 3(1,1); *C* is the line segment from (0,0) to (1,1).
- **4**. **F** =  $3\langle -1, 1 \rangle$ ; *C* is the line segment from (0,0) to (1,1).

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18.02SC Multivariable Calculus Fall 2010

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