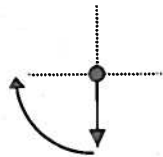


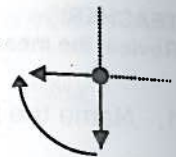
Jill wants to **rotate** this arrow  $\frac{1}{4}$  of a turn clockwise:



**Step 1:**  
She draws a circular arrow to show how far the arrow should turn.



**Step 2:**  
She draws the final position of the arrow.



1. Write how far ( $\frac{1}{4}$ ,  $\frac{1}{2}$  or  $\frac{3}{4}$  turn) each arrow has moved from start to finish.

a)  turn clockwise

b)  turn clockwise

c)  turn clockwise

d)  turn clockwise

2. Write how far each arrow has moved counter clockwise from start to finish.

a)  turn counter clockwise

b)  turn counter clockwise

c)  turn counter clockwise

d)  turn counter clockwise

3. Show where the arrow would be after each turn.  
**HINT: Use Jill's method.**

a)  $\frac{1}{4}$  turn clockwise

b)  $\frac{1}{2}$  turn clockwise

c)  $\frac{3}{4}$  turn clockwise

d) 1 whole turn clockwise

e)  $\frac{1}{4}$  turn counter clockwise

f)  $\frac{3}{4}$  turn counter clockwise

g)  $\frac{3}{4}$  turn counter clockwise

h) 1 whole turn counter clockwise

i)  $\frac{3}{4}$  turn counter clockwise

j)  $\frac{1}{4}$  turn clockwise

k)  $\frac{1}{2}$  turn counter clockwise

l)  $\frac{3}{4}$  turn clockwise