Quiz #4

Name: _____   **Use a pencil, not a pen.**

In an *x-y* plane, **four** different forces act on a small circular object of mass *m*, which is at rest. Three of those forces are sketched to scale on the diagram already. You have to "measure" using the gray blocks. Each gray block represents 1 Newton.

1. [3] Write the *components* of the three forces that are already drawn. Include units and signs. One of them is already done for you as an example.

F_{1x} = _____ F_{2x} = _____ F_{3x} = _____
F_{1y} = _____ F_{2y} = ____−2 N____ F_{3y} = _____

2. [1] Compute: what is the *angle* of vector F_1 (in degrees, using only positive numbers. Answers may be between 0° and 360°):
   θ_1 = __+_____ °

3. [1] Find the *angle* of F_2 (in degrees, using only positive numbers. Hint: it is *not* between 0° and 90°!):
   θ_2 = __+_____ °

4. [1] Find the *angle* of F_3 (in degrees, using only positive numbers):
   θ_3 = __+_____ °

5. [1] What is the magnitude of F_1?
   $|F_1|$ = _____ N
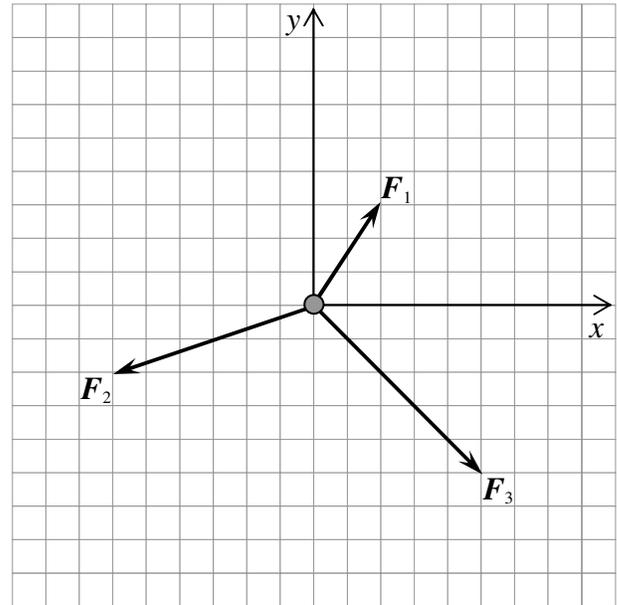
6. [2] On the sketch, and using the same scale, *draw and label F_{123},* a vector starting at the center that is equal to $F_1 + F_2 + F_3$.

7. [1] Knowing that $F_1 + F_2 + F_3 + F_4 = 0$, draw the required vector F_4 on the sketch.