General Physics I Laboratory
Dr. Pogo

Due February 26, 2026

# Quiz #5

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

In an *x*-*y* plane, **three** different forces act on a small circular object of mass *m*, which is at rest. Two 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 two forces that are already drawn. Include units and signs. One of them is already done for you as an example.

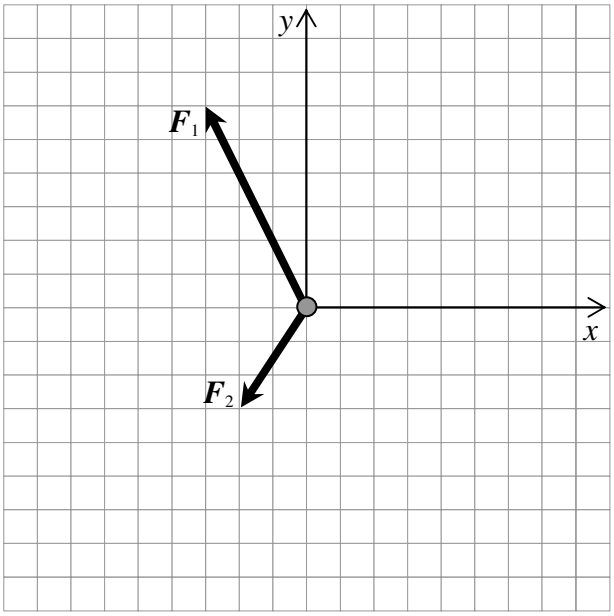
   $F_{1x}$ = _____ $F_{2x}$ = _____
   $F_{1y}$ = _____ $F_{2y}$ = −3 N

2. [1] Compute: what is the *angle* of vector $\boldsymbol{F}_1$ (in degrees, using only positive numbers. Answers may be between 0° and 360°:
   $\theta_1$ = + °

3. [1] Find the *angle* of $\boldsymbol{F}_2$ (in degrees, using only positive numbers. Answers may be between 0° and 360°:
   $\theta_2$ = + °

4. [1] What is the magnitude of $\boldsymbol{F}_1$?
   $|\boldsymbol{F}_1|$ = + N

5. [1] What is the magnitude of $\boldsymbol{F}_2$?
   $|\boldsymbol{F}_2|$ = N




6. [2] On the sketch, and using the same scale, *draw and label* $\boldsymbol{F}_{12}$, a vector starting at the center that is equal to $\boldsymbol{F}_1 + \boldsymbol{F}_2$.

7. [1] Knowing that $\boldsymbol{F}_1 + \boldsymbol{F}_2 + \boldsymbol{F}_3 = 0$, draw the required vector $\boldsymbol{F}_3$ on the sketch.