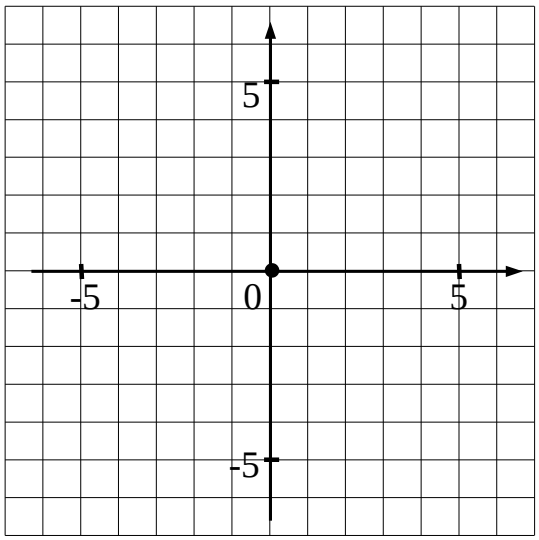
1. Calculate: $\dfrac{\frac{1}{2}-\frac{1}{3}+\frac{1}{4}}{\frac{1}{2}+\frac{1}{3}+\frac{1}{4}} - \frac{1}{13} =$



2. Plot vectors $\vec{g}=(2,5)$, $\vec{m}=(-1,3)$, and $\vec{x}=(1,-4)$

Find and plot vectors …

… $\vec{g}+\vec{m} = (\quad , \quad)$

… $\vec{x}+\vec{g} = (\quad , \quad)$

… $\vec{x}+\vec{m} = (\quad , \quad)$

… $\vec{m}+\vec{m} = (\quad , \quad)$

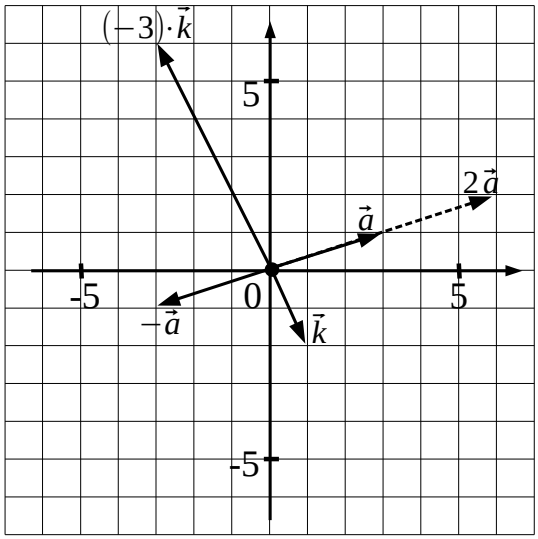
Properties of vectors:

I. To multiply a vector my a number each coordinate of the vector has to be multiplied by this number:

$\beta\times\vec{a}(x,y) = (\beta\cdot x, \beta\cdot y)$

II. Subtracting a vector is the same as adding an opposite vector:

$\vec{m} - \vec{n} = \vec{m} + (\overrightarrow{-n})$



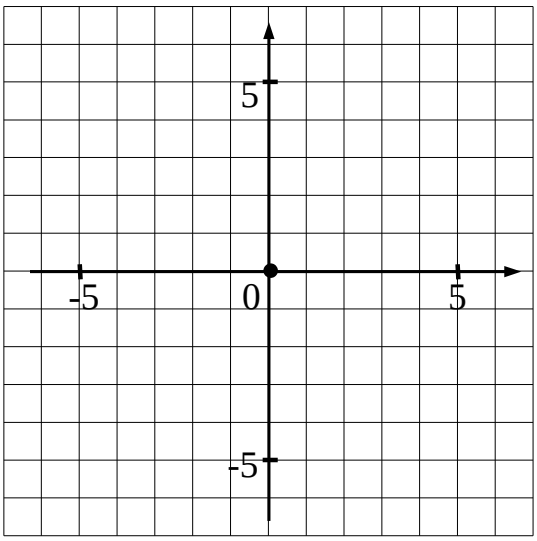
3. Consider vectors $\vec{g}=(2,3)$, $\vec{m}=(-2,3)$, and $\vec{x}=(1,-2)$

Calculate and plot vectors:

$2\vec{g} = (\quad , \quad)$

$-\vec{m} = (\quad , \quad)$

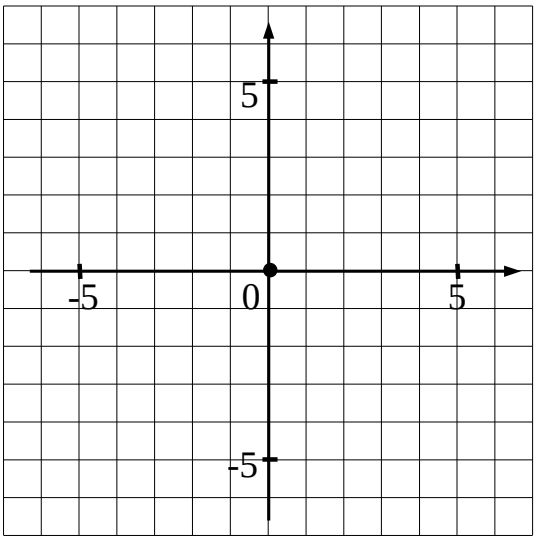
$2\cdot\vec{x} = (\quad , \quad)$



4. Calculate the following vectors:

$\vec{a} = (3,1)$, $\vec{b} = (3,-1)$,

$\vec{g} = (0,3)$, $\vec{e} = (-1,0)$.



$\vec{a}+\vec{b} =$ _____

$\vec{a}-\vec{b} =$ _____

$\vec{a}+\vec{e} =$ _____

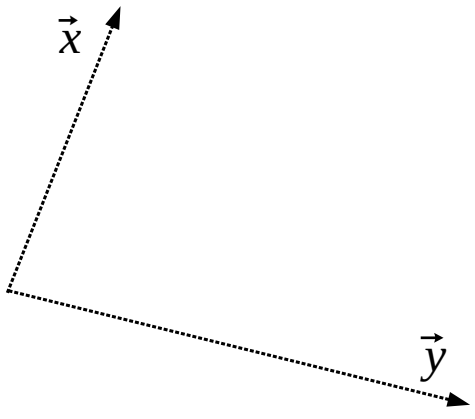
$\vec{a}-\vec{e} =$ _____

$\vec{a}+\vec{a} =$ _____

$\vec{g}+\vec{a} =$ _____

$\vec{g}+2\cdot\vec{a} =$ _____

5. Plot vector $\vec{x} - \vec{y}$, and $2\cdot\vec{x} + \vec{y}$ using the rule of parallelogram with the help of a compass and a straight edge.



6. Solve the equation:

$|3x-1| = 4$