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

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

Find and plot vectors …

… $\vec{g}+\vec{m} = ($, $)$

… $\vec{x}+\vec{g} = ($, $)$

… $\vec{x}+\vec{m} = ($, $)$

… $\vec{m}+\vec{m} = ($, $)$

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:

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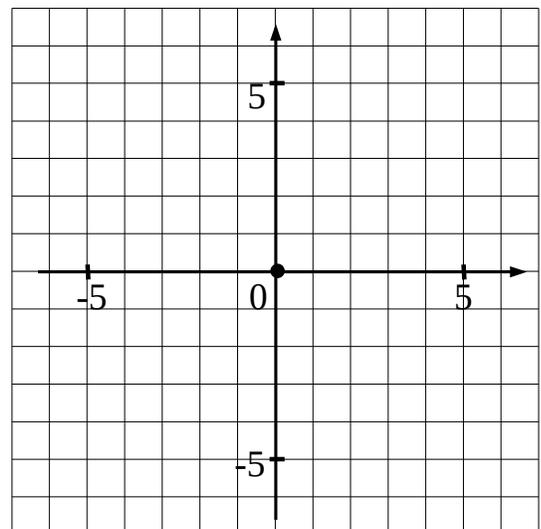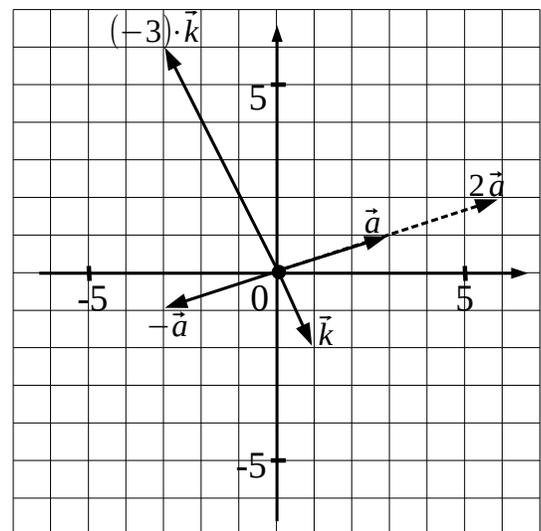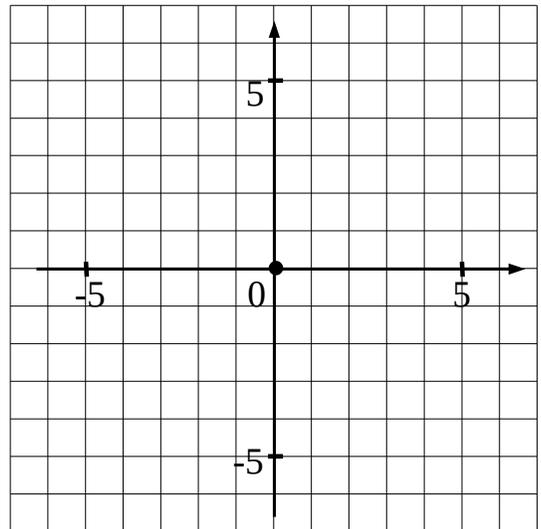
3. Consider vectors $\vec{g}=(2,3)$, $\vec{m}=(-2,3)$, and $\vec{x}=(1,-2)$

Calculate and plot vectors:

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

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

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

4. Calculate the following vectors:

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

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

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

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

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

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

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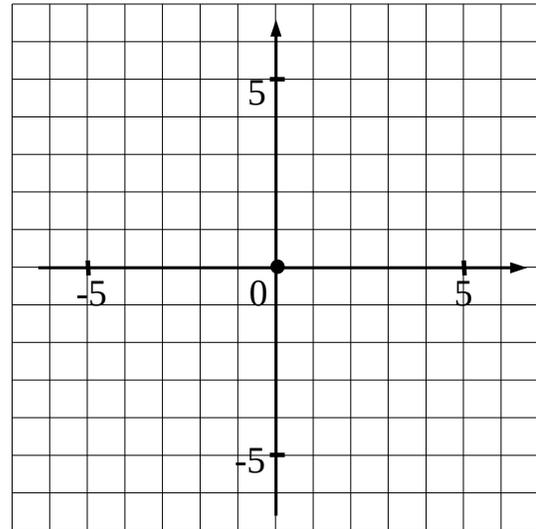
5. Plot vector $\vec{x} - \vec{y}$, and
  $2\cdot\vec{x} + \vec{y}$ using the rule of
parallelogram with the help of a
compass and a straight edge.

$\vec{x}$

$\vec{y}$

6. Solve the equation:

$|x-1| = 4$