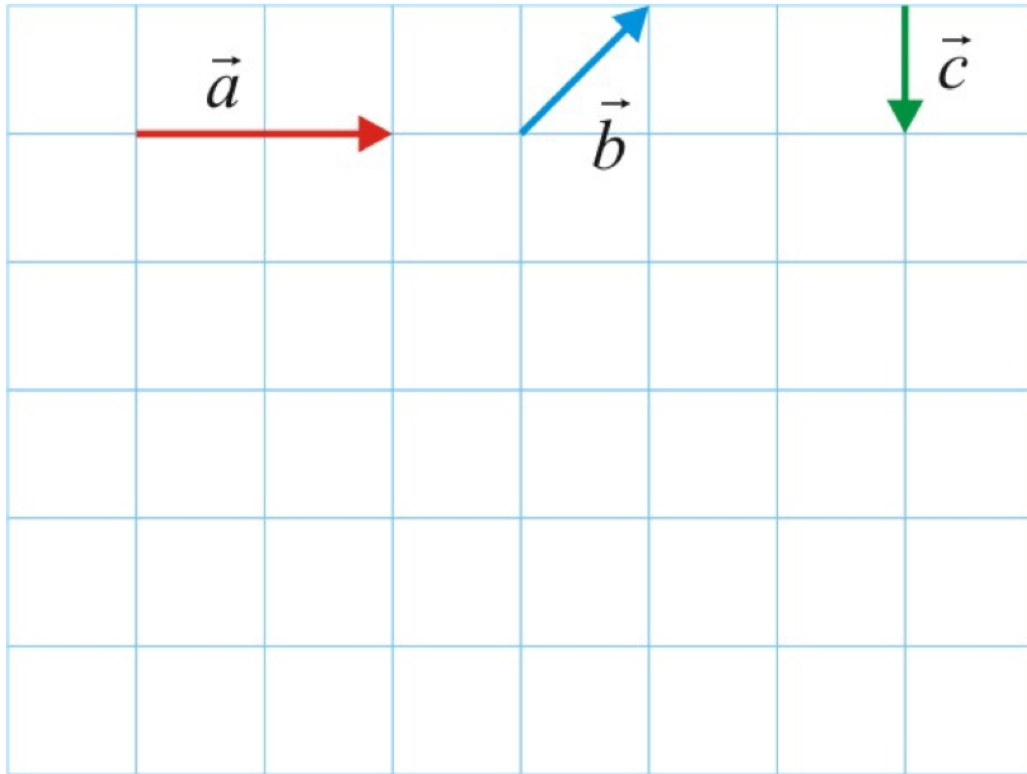


Ex 1. Use the following diagram and the triangle rule compute the required operations.

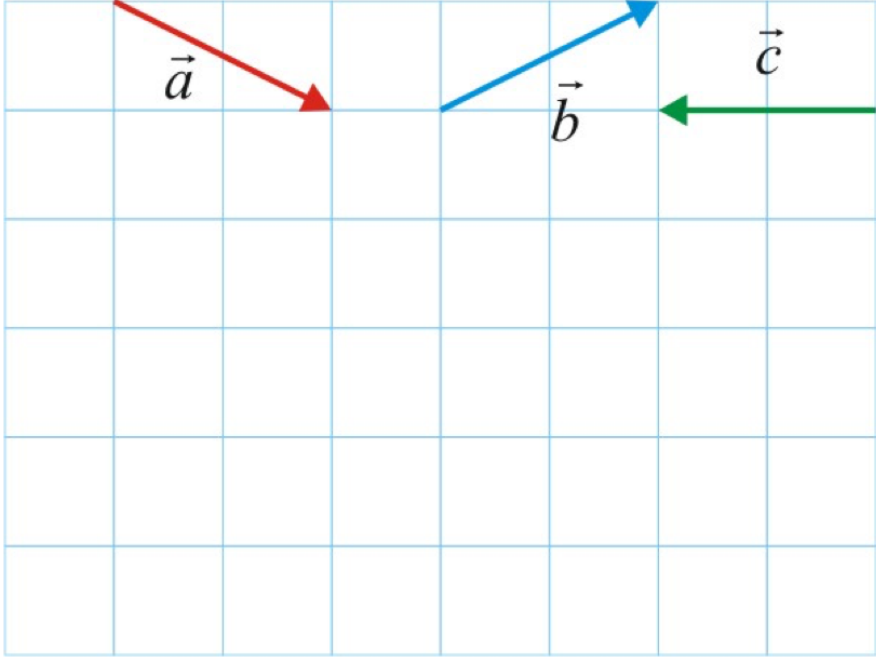


a)  $\vec{a} + \vec{b}$

b)  $\vec{b} + \vec{c}$

c)  $\vec{a} + \vec{c}$

Ex 3. Use the parallelogram rule to compute the required operations:

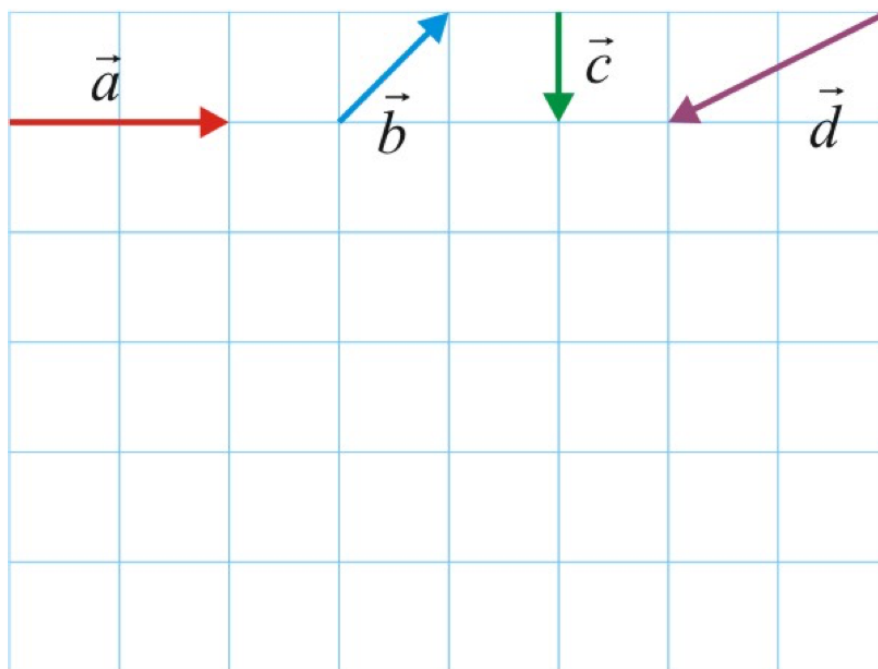


a)  $\vec{a} + \vec{b}$

b)  $\vec{b} + \vec{c}$

c)  $\vec{a} + \vec{c}$

Ex 2. Use the following diagram and the triangle rule compute the required operations.



a)  $\vec{a} + \vec{b} + \vec{c}$

b)  $\vec{b} + \vec{c} + \vec{d}$

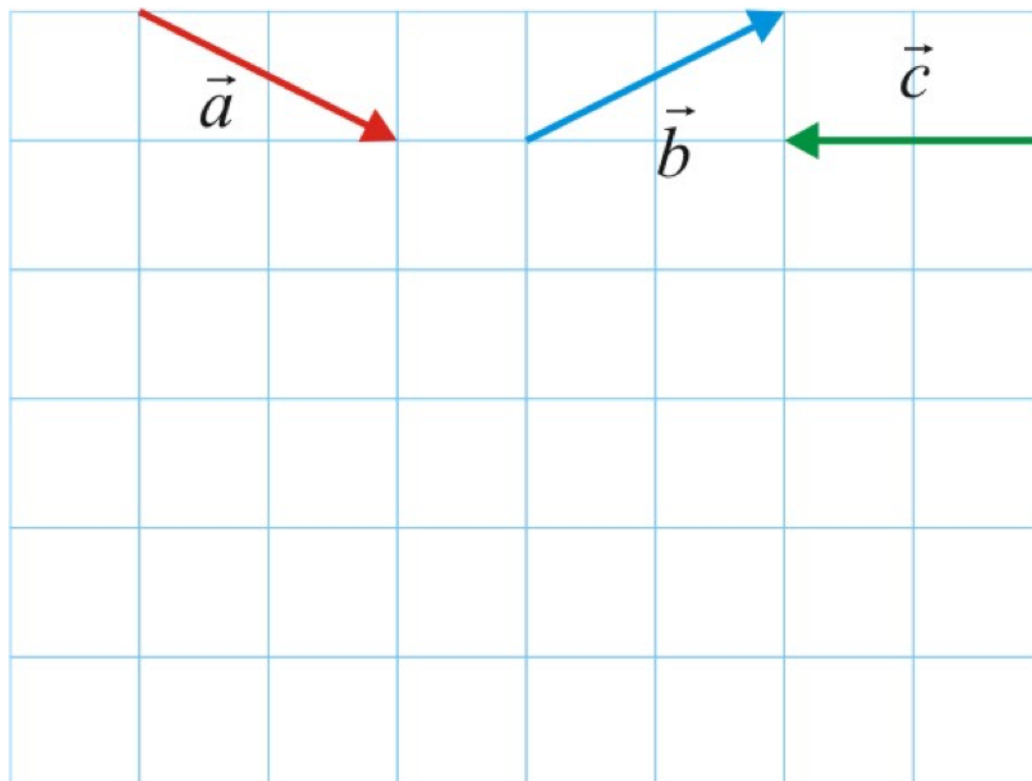
c)  $\vec{a} + \vec{b} + \vec{c} + \vec{d}$

Ex 7. Compute the required operations.

a)  $\vec{a} - \vec{b}$

b)  $\vec{b} - \vec{c}$

c)  $\vec{a} - \vec{c}$



Consider following vectors:

$$\mathbf{a} = \begin{pmatrix} -3 \\ -5 \end{pmatrix} \quad \mathbf{b} = \begin{pmatrix} 3 \\ 7 \end{pmatrix} \quad \mathbf{c} = \begin{pmatrix} 7 \\ -1 \end{pmatrix} \quad \mathbf{d} = \begin{pmatrix} 4 \\ -4 \end{pmatrix}$$

Please work out each of the equations below and graph each operation:

**1.  $\mathbf{a} - \mathbf{b}$**

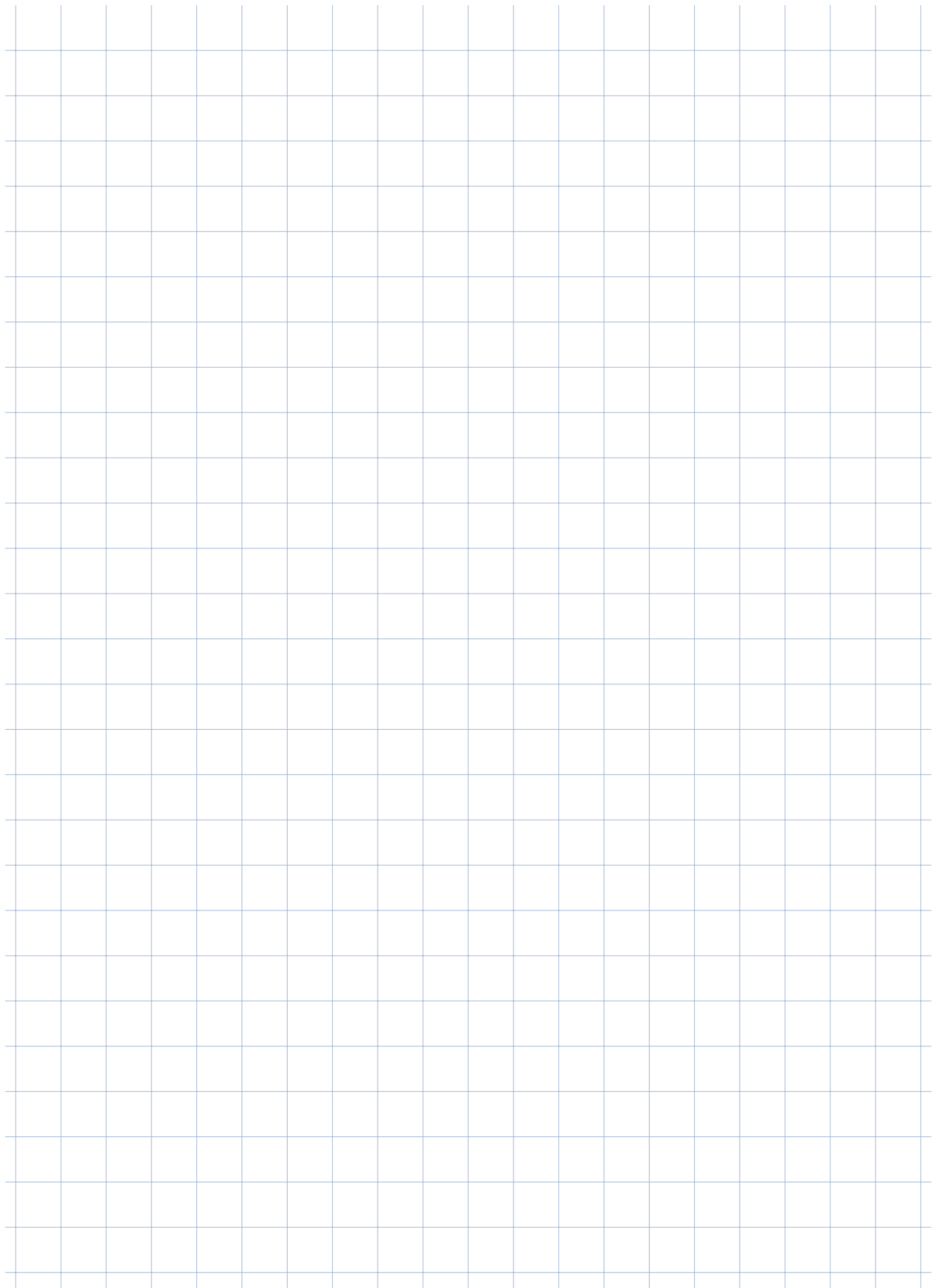
**2.  $\mathbf{a} - \mathbf{c}$**

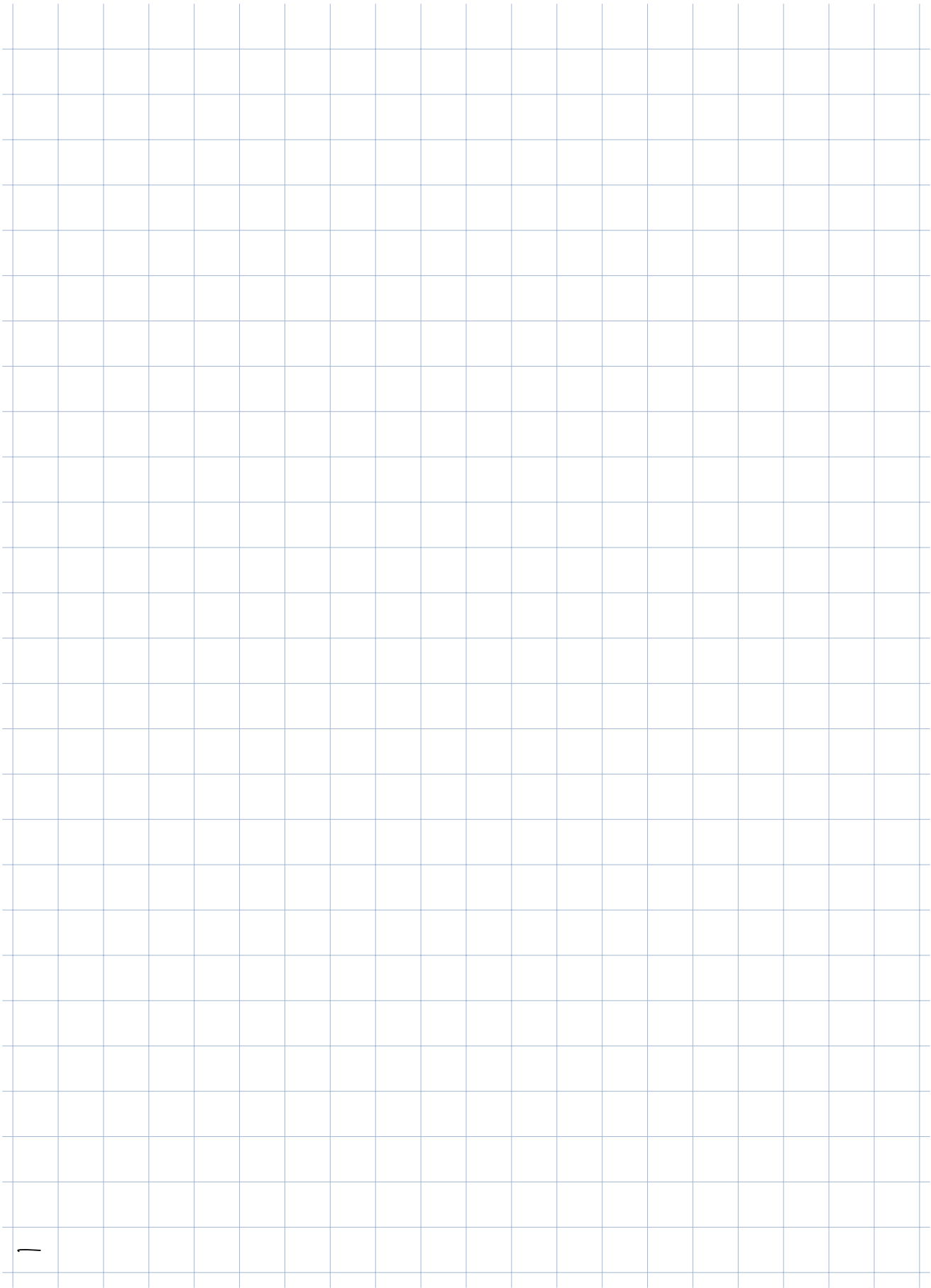
**3.  $\mathbf{a} - \mathbf{d}$**

**4.  $\mathbf{c} - \mathbf{d}$**

**5.  $\mathbf{b} - \mathbf{c} - \mathbf{a}$**

**6.  $\mathbf{c} - \mathbf{a} - \mathbf{d}$**





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