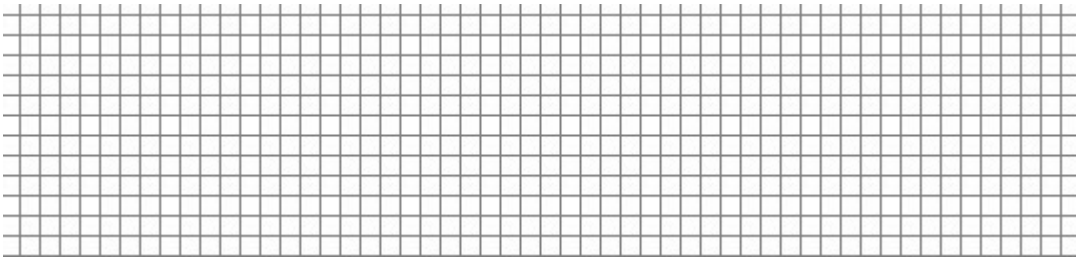


Ex 1. (0.5 pts) Write down as a power of 2:

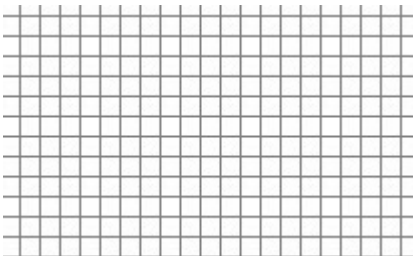
$$(2^{\frac{1}{2}} \cdot \sqrt[3]{2^4})^2 \cdot \sqrt{32} =$$

Ex 2. (2 pts) Solve $3|x - 3| - |2x + 2| < 2x$.

Ex 3. (2 pts) Draw the graphs of $f(x) = ||x - 2| - 1|$ step by step and solve $f(x) > 1$ graphically.



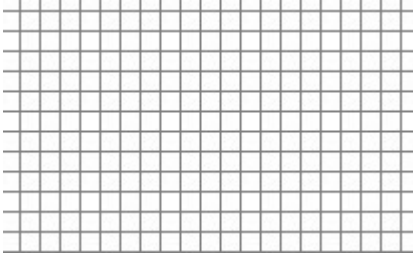
Ex 4. (2 pts) Let $f(x) = x \cdot |x| - \frac{2x}{|x|}$. Write the formula for $f(x)$ without the use of the absolute value bars ("|...|"), find its domain, the set of values and draw its graph.



Ex 5. (0.5 pts) Divide $(x^4 - 2x^3 + 4x^2 + 8) : (x + 1)$ using the Hörner scheme.



Ex 6. (2 pts) Find the inverse of $f(x) = 2x - 4$, check the correctness of your work and draw the graphs of both $f(x)$ and $f^{-1}(x)$.



Ex 7. (1.5 pts + 1 pt) Solve:

a) $\frac{x+3}{x+2} - \frac{x-3}{x-2} = \frac{2x^2-4}{x^2-4}$

b) $\sqrt{2x+5} > 12$



Ex 8. (1.5 pts) Solve $(\frac{1}{2})^{(x+1)(x+2)} \geq \frac{1}{64}$



Theory. (2x1 pts) a) Give an example of a function that is odd and is not even - both a graph and a formula.

b) Give an example of a decreasing logarithmic function - both a graph and a formula.

