

29/3/2021

30 $|x + 1| = 2$

$$|a| = \begin{cases} a & \text{se } a \geq 0 \\ -a & \text{se } a < 0 \end{cases}$$

$$|f(x)| = \begin{cases} f(x) & \text{se } f(x) \geq 0 \\ -f(x) & \text{se } f(x) < 0 \end{cases}$$

\Downarrow

$$\begin{cases} x+1 \geq 0 \\ x+1 = 2 \end{cases} \quad \vee \quad \begin{cases} x+1 < 0 \\ -(x+1) = 2 \end{cases}$$

$$\begin{cases} x \geq -1 \\ x = 1 \end{cases} \quad \vee \quad \begin{cases} x < -1 \\ -x-1 = 2 \end{cases} \quad \begin{cases} x < -1 \\ x = -3 \end{cases}$$

$$\boxed{x = 1 \quad \vee \quad x = -3}$$

40 $|2 - x^2 + x| = 2$

$$\begin{cases} 2 - x^2 + x \geq 0 \\ \cancel{2 - x^2 + x = 2} \end{cases} \quad \vee \quad \begin{cases} 2 - x^2 + x < 0 \\ -(2 - x^2 + x) = 2 \end{cases}$$

$$\begin{cases} 2 - x^2 + x \geq 0 \\ -x^2 + x = 0 \end{cases} \quad \vee \quad \begin{cases} 2 - x^2 + x < 0 \\ -2 + x^2 - x = 2 \end{cases}$$

\downarrow

$$-x(x-1) = 0$$

$$x = 0 \quad \vee \quad x = 1$$

$$\begin{cases} 2 - x^2 + x \geq 0 \\ \nearrow \text{Stirnuss} \nearrow \\ x = 0 \vee x = 1 \end{cases}$$

\vee

$$\begin{cases} 2 - x^2 + x < 0 \\ -2 + x^2 - x = 2 \end{cases}$$

$$2 - 0^2 + 0 \geq 0 \text{ OK!}$$

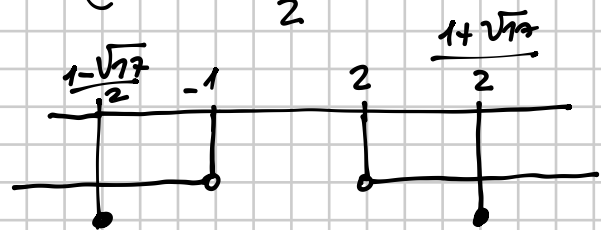
$$2 - 1 + 1 \geq 0 \text{ OK!}$$

$$x = 0 \vee x = 1$$

$$\begin{cases} x^2 - x - 2 > 0 \\ x^2 - x - 4 = 0 \end{cases}$$

$$\begin{cases} (x-2)(x+1) > 0 & \begin{matrix} x_1 = -1 \\ x_2 = 2 \end{matrix} \\ x = \frac{1 \pm \sqrt{17}}{2} \end{cases}$$

$$\begin{cases} x < -1 \vee x > 2 \\ x = \frac{1 \pm \sqrt{17}}{2} \end{cases}$$



$$x = 0 \vee x = 1 \vee x = \frac{1 \pm \sqrt{17}}{2}$$