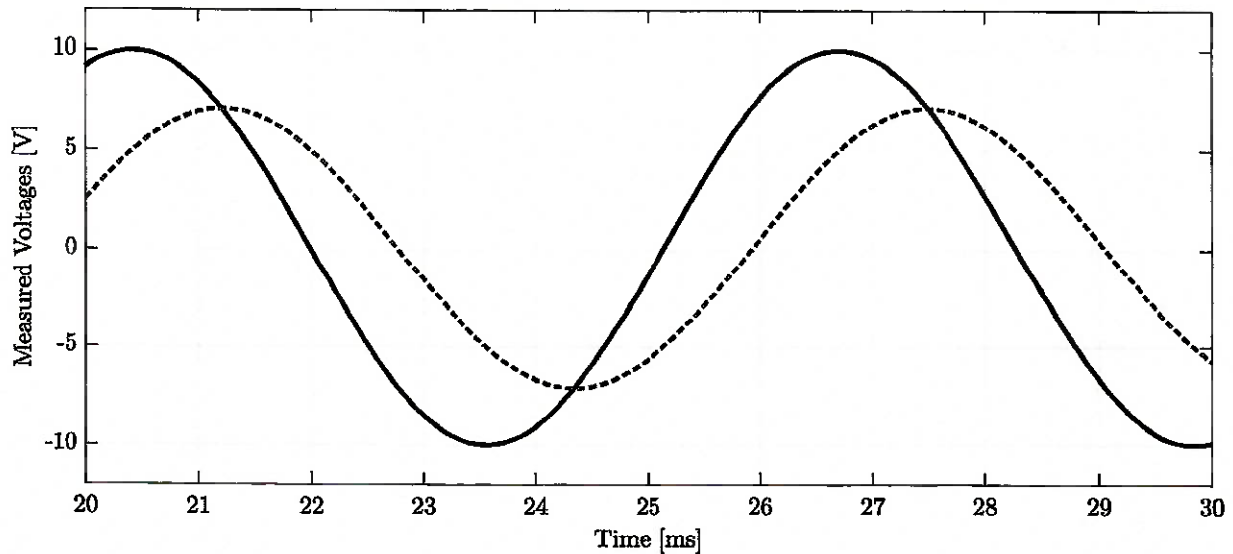


Name: SOLUTIONS

Kerberos Username: \_\_\_\_\_



① Which curve is  $v_c$ ?

• Dotted:  $v_c$  amplitude must be smaller than  $v_i$

② If  $R = 1\Omega$ , what is  $C$ ?

$$T \approx 6.2 \text{ ms}$$

$$\omega = \frac{2\pi}{6.2 \times 10^{-3}} = 10^3 \text{ rad/s}$$

$$\frac{V_i}{\sqrt{1+(\omega C)^2}} = \frac{10\text{V}}{\sqrt{2}} \quad \text{where } V_i = 10\text{V}$$

$$\omega C = 1$$

$$T = \frac{1}{\omega} = 10^{-3} \text{ s} = RC$$

$$C = 1 \text{ mF}$$