1. The current waveform shown below flows through a $0.025 \ \mu F$ capacitor. Make an accurate drawing of the voltage across it. Label your graph. Assume the initial voltage across the capacitor is $0 \ V$.



Name:

2. The voltage across a 2 μ F capacitor is shown below. Make an accurate drawing of the capacitor current. Label your graph.



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3. The voltage across a 0.68 μ F capacitor is $v_C(t) = -6 \cdot V \cdot \cos\left(200 \cdot t + \frac{\pi}{2}\right)$ find $i_C(t)$.

4. The current through a 0.0047 μ F capacitor is $i_C(t) = 18 \cdot \mu A \cdot \cos\left(628 \cdot t - \frac{\pi}{4}\right)$ find $v_C(t)$.

5. A capacitor voltage and current are shown. What value is the capacitor?



Answers

1. 1.8·V 0.6·V 2.4·V 2. -6·mA 12·mA ramp to -8mA

3.
$$i_{C}(t) = 0.816 \cdot mA \cdot \cos(200 \cdot t + \pi)$$

5. $0.25 \cdot \mu F$
4. $v_{C}(t) = 6.1 \cdot V \cdot \cos\left(628 \cdot t - \frac{3 \cdot \pi}{4}\right)$
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