

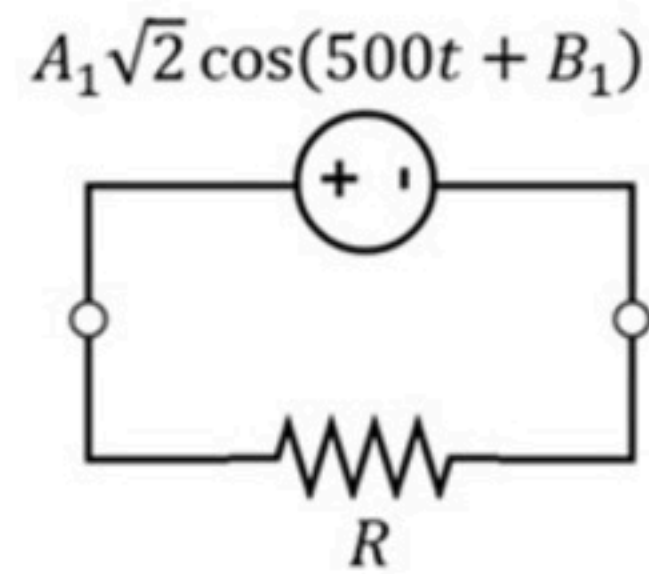
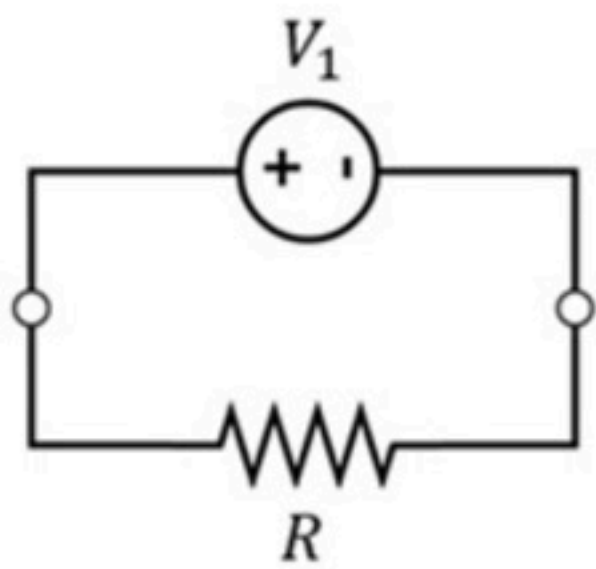
AC power 004

Problem has been graded.

You are told that the sources in the two circuits below supply the same average power.

(a) Find the average power P supplied.

(b) Find A_1 .



Given Variables:

V_1 : 10 V

R : 5 ohm

B_1 : 135 degrees

Calculate the following:

P (W) :

20



A_1 (V) :

10



Hint: What is the definition of V_{rms} ?

You are told that the sources in the two circuits below supply the same average power.

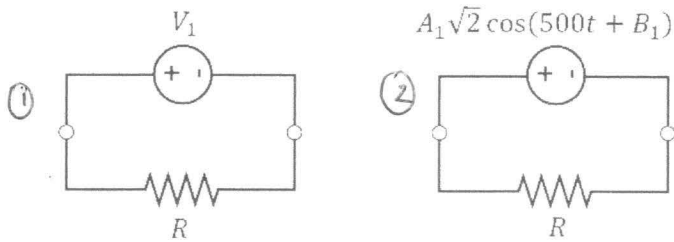
(a) Find the average power P supplied.

(b) Find A_1 .

$$V_1 : 6 \text{ V}$$

$$R : 2 \text{ ohm}$$

$$B_1 : 60 \text{ degrees}$$



(a) CIRCUIT ① : $P = \frac{V_1^2}{R} = \frac{36}{2} \Rightarrow \boxed{P = 18 \text{ W}}$

(b) FOR THE SAME AVERAGE POWER

$$V_{\text{RMS}} = V_1 = 6 \text{ V}$$

$$V_{\text{RMS}} = \frac{V_m}{\sqrt{2}} = \frac{A_1 \sqrt{2}}{\sqrt{2}}$$

$$\Rightarrow \boxed{A_1 = 6 \text{ V}}$$