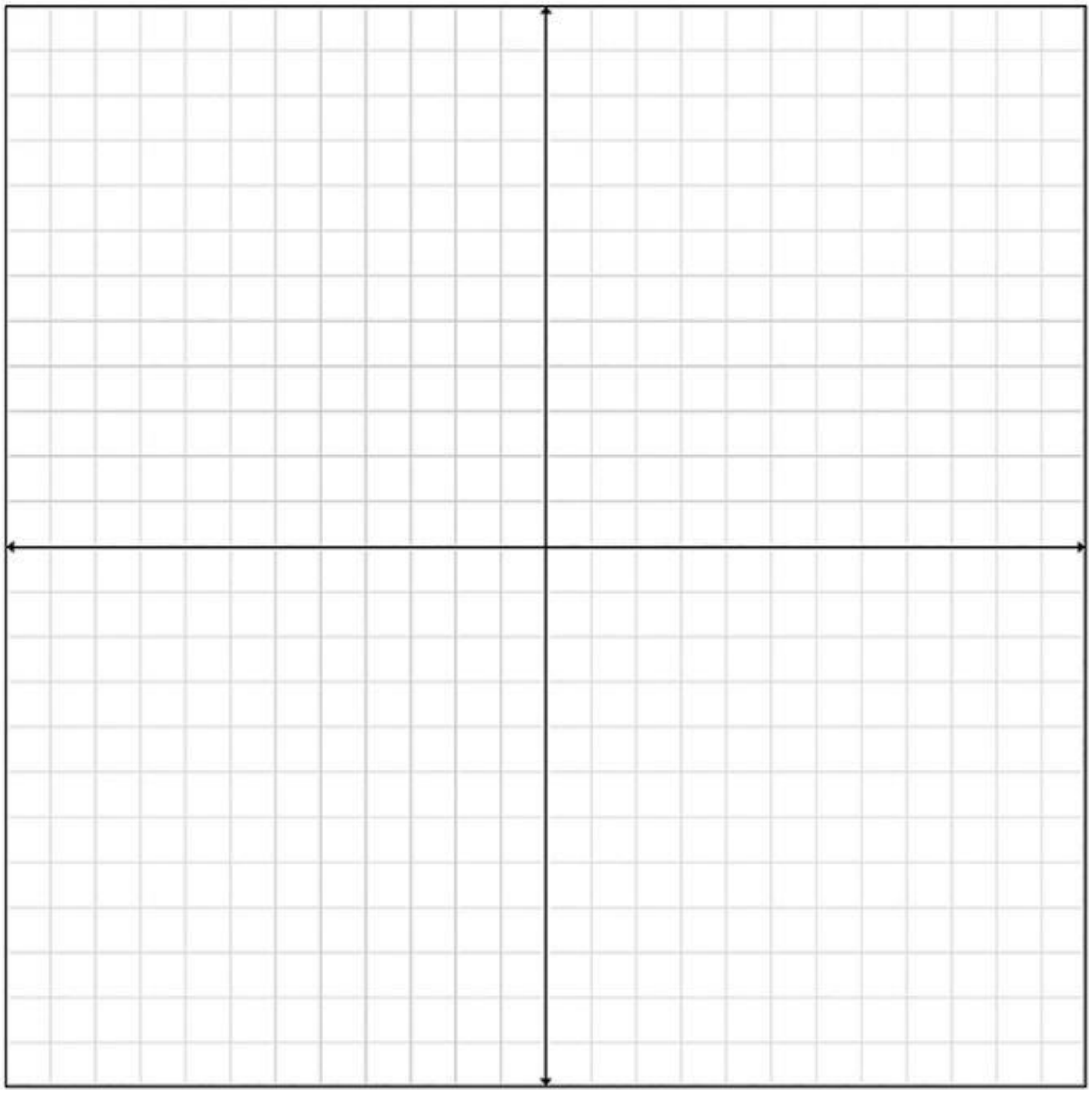
EN-3212 Electronics Worksheet 7

Sine and Cosine

1. Sine and Cosine functions are very similar functions. How are they different from one another?
2. Graph the function below (the equation uses degrees instead of radians):

$$f(t) = 100\sin(6t + 30)$$



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3. What is the amplitude of the sine wave?

4. Given that this equation was written using degrees instead of radians, what is the period of the wave?

5. What is the frequency?

6. What is the phase offset?

7. What is the RMS amplitude?

8. What does RMS stand for?

9. Why do we use RMS voltage values for AC voltage sources?

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10. How would you change the equation to turn it into a Cosine wave?

11. What piece of information are you going to omit when you write that equation in amplitude-phase notation?

12. How would you write the original equation in amplitude-phase notation?

13. Write down Euler's equation.

14. Convert what you wrote in amplitude-phase notation into a complex number using Euler's equation.