HARMONIC FUNCTIONS DRILL

last update October 11, 2009

All quantities appearing in parentheses are real numbers.

1. Find expressions for a and b in terms of A and B :

$$A \sin(\theta+B) = a \cos(\theta + b) \ .$$

2. Find expressions for a and b in terms of A and B :

$$A \cos(\theta+B) = a\sin(\theta) + b \cos(\theta) \ .$$

3. Find expressions for a, b, c, and d in terms of A and B:

$$A\sin(\theta) + B\cos(\theta) = a\sin(\theta+b) = c \cos(\theta + d) \ .$$

4. Find expressions for a and b in terms of A, B, C, and D:

$$A \sin(\theta+B) + C \sin(\theta+D) = a \sin(\theta+b) \ .$$

5. Find expressions for a and b in terms of A, B, C, and D:

$$A \cos(\theta+B) + C \cos(\theta+D) = a \cos(\theta+b) \ .$$

6. Find expressions for a and b in terms of A and B:

$$A \sin(\theta+B) = a \sin(\theta) + b \cos(\theta) \ .$$

7. Find an expression for a in terms of A and B :

$$A \exp i(\theta+B) = a \exp i(\theta) \ .$$

8. Find expressions for a and b in terms of A and B:

$$A \exp i(\theta) + B \exp -i(\theta) = a \sin(\theta) + b \cos(\theta) \ .$$

9. Find expressions for a and b in terms of A and B :

$$A \sin(\theta) + B \cos(\theta) = a \exp i(\theta) + b \exp -i(\theta) \ .$$

10. Find expressions for a and b in terms of A and B:

$$A \sin(\theta) + B \cos(\theta) = a \exp i(\theta) + b \exp -i(\theta) \ .$$

11. Find expressions for a and b in terms of A and B:

$$A \cos(\theta+B) = a \exp i(\theta) + b \exp -i(\theta) \ .$$