

For the following exercises, rewrite the product as a sum or difference.

5. $16\sin(16x)\sin(11x)$

6. $20\cos(36t)\cos(6t)$

7. $2\sin(5x)\cos(3x)$

8. $10\cos(5x)\sin(10x)$

9. $\sin(-x)\sin(5x)$

10. $\sin(3x)\cos(5x)$

For the following exercises, evaluate the product using a sum or difference of two functions. Evaluate exactly.

17. $\cos(45^\circ)\cos(15^\circ)$

18. $\cos(45^\circ)\sin(15^\circ)$

19. $\sin(-345^\circ)\sin(-15^\circ)$

20. $\sin(195^\circ)\cos(15^\circ)$

21. $\sin(-45^\circ)\sin(-15^\circ)$

For the following exercises, evaluate the product using a sum or difference of two functions. Leave in terms of sine and cosine.

22. $\cos(23^\circ)\sin(17^\circ)$

23. $2\sin(100^\circ)\sin(20^\circ)$

24. $2\sin(-100^\circ)\sin(-20^\circ)$

25. $\sin(213^\circ)\cos(8^\circ)$

26. $2\cos(56^\circ)\cos(47^\circ)$

For the following exercises, rewrite the sum as a product of two functions or the product as a sum of two functions. Give your answer in terms of sines and cosines. Then evaluate the final answer numerically, rounded to four decimal places.

42. $\cos(176^\circ)\sin(9^\circ)$

43. $\sin(-14^\circ)\sin(85^\circ)$