



Trigonometry Identities - Product to Sum to Identity (Degrees)

1 Complete the product to sum identity for this expression

$$\sin(135^\circ)\cos(45^\circ)$$

A $= \frac{1}{2} [\sin(135^\circ + 45^\circ) + \sin(135^\circ - 45^\circ)]$

B $= \frac{1}{2} [\sin(135^\circ + 45^\circ) + \sin(135^\circ - 45^\circ)]$

2 Complete the product to sum identity for this expression

$$\cos(315^\circ)\cos(210^\circ)$$

A $= \frac{1}{2} [\sin(315^\circ + 210^\circ) + \sin(315^\circ - 210^\circ)]$

B $= \frac{1}{2} [\cos(315^\circ - 210^\circ) + \cos(315^\circ + 210^\circ)]$

3 Complete the product to sum identity for this expression

$$\cos(30^\circ)\sin(210^\circ)$$

A $= \frac{1}{2} [\sin(30^\circ + 210^\circ) - \sin(30^\circ - 210^\circ)]$

B $= \frac{1}{2} [\cos(30^\circ + 210^\circ) + \cos^2(30^\circ + 210^\circ)]$

4 Complete the product to sum identity for this expression

$$\cos(225^\circ)\cos(135^\circ)$$

A $= \frac{1}{2} [\cos(225^\circ - 135^\circ) + \cos(225^\circ + 135^\circ)]$

B $= \frac{1}{2} [\sin(225^\circ + 135^\circ) + \sin(225^\circ - 135^\circ)]$

5 Complete the product to sum identity for this expression

$$\sin(150^\circ)\cos(30^\circ)$$

A $= \frac{1}{2} [\sin(150^\circ + 30^\circ) + \sin(150^\circ - 30^\circ)]$

B $= \frac{1}{2} [\sin(150^\circ + 30^\circ) + \sin(150^\circ - 30^\circ)]$

6 Complete the product to sum identity for this expression

$$\cos(225^\circ)\cos(150^\circ)$$

A $= \frac{1}{2} [\cos(225^\circ - 150^\circ) + \cos(225^\circ + 150^\circ)]$

B $= \frac{1}{2} [\cos(225^\circ + 150^\circ) + \cos^2(225^\circ + 150^\circ)]$

7 Complete the product to sum identity for this expression

$$\cos(135^\circ)\sin(30^\circ)$$

A $= \frac{1}{2} [\cos(135^\circ + 30^\circ) + \cos^2(135^\circ + 30^\circ)]$

B $= \frac{1}{2} [\sin(135^\circ + 30^\circ) - \sin(135^\circ - 30^\circ)]$

8 Complete the product to sum identity for this expression

$$\cos(300^\circ)\cos(60^\circ)$$

A $= \frac{1}{2} [\cos(300^\circ - 60^\circ) + \cos(300^\circ + 60^\circ)]$

B $= \frac{1}{2} [\cos(300^\circ + 60^\circ) + \cos^2(300^\circ + 60^\circ)]$