

Double Angle Identities: Apply the double-angle and half-angle formulas for trigonometric functions

- 1 The expression  $\cos^2 \theta - \cos 2\theta$  is equivalent to
  - 1)  $\sin^2 \theta$
  - 2)  $-\sin^2 \theta$
  - 3)  $\cos^2 \theta + 1$
  - 4)  $-\cos^2 \theta - 1$
  
- 2 The expression  $\sin 2A - 2 \sin A$  is equivalent to
  - 1)  $(\sin A)(\sin A - 2)$
  - 2)  $(2 \sin A)(\sin A - 1)$
  - 3)  $(\sin A)(2 \cos A - 1)$
  - 4)  $(2 \sin A)(\cos A - 1)$
  
- 3 The expression  $\sin 2A + \cos A$  is equivalent to
  - 1)  $\cos A(2 \sin A + 1)$
  - 2)  $\cos A(\cos A + 1)$
  - 3)  $2(\sin A + \cos A)$
  - 4)  $\cos A(\sin A + 1)$
  
- 4 The expression  $\sin A \cos A + \sin 2A$  is equivalent to
  - 1)  $\sin A(\cos A + \sin A)$
  - 2)  $\cos A + 2 \sin A$
  - 3)  $3 \sin A \cos A$
  - 4)  $\cos A + 2 \sin 2A$
  
- 5 The expression  $2 \sin^2 A + \cos 2A$  is equivalent to
  - 1) 1
  - 2) 2
  - 3)  $\sin^2 A$
  - 4)  $-\sin^2 A$

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6 The expression  $\frac{\sin 2A}{2 \cos A}$  is equivalent to

- 1)  $\cos A$
- 2)  $\tan A$
- 3)  $\sin A$
- 4)  $\frac{1}{2} \sin A$

7 The expression  $\frac{2 \cos \theta}{\sin 2\theta}$  is equivalent to

- 1)  $\csc \theta$
- 2)  $\sec \theta$
- 3)  $\cot \theta$
- 4)  $\sin \theta$

8 Which trigonometric function is equivalent to the expression  $\frac{\sin 2x}{2 \sin x}$  is equivalent to

- 1)  $\tan x$
- 2)  $\cot x$
- 3)  $\sin x$
- 4)  $\cos x$

9 The expression  $\frac{\sin 2\theta}{\sin^2 \theta}$  is equivalent to

- 1)  $\frac{2}{\sin \theta}$
- 2)  $2 \cos \theta$
- 3)  $2 \cot \theta$
- 4)  $2 \tan \theta$

10 The expression  $\frac{\sin 2A}{2 \cos^2 A}$  is equivalent to

- 1)  $\sin A$
- 2)  $\tan A$
- 3)  $\cot A$
- 4)  $2 \tan A$

11 The expression  $\frac{1 + \cos 2A}{\sin 2A}$  is equivalent to

- 1)  $\cot A$
- 2)  $\tan A$
- 3)  $\sec A$
- 4)  $1 + \cot 2A$

12 For all values of  $A$  for which the expressions are defined,  $\frac{\sin 2A}{\cos A} - \sin A$  is equivalent to

- 1) 1
- 2)  $\cos A$
- 3)  $\sin A$
- 4)  $2 \sin A$

13 If  $\theta$  is a positive acute angle and  $\sin 2\theta = \frac{\sqrt{3}}{2}$ , then  $(\cos \theta + \sin \theta)^2$  equals

- 1) 1
- 2)  $1 + \frac{\sqrt{3}}{2}$
- 3)  $30^\circ$
- 4)  $60^\circ$

14 The expression  $\sec x \sin 2x$  is equivalent to

- 1)  $\frac{1}{2}$
- 2) 2
- 3)  $2 \cos x$
- 4)  $2 \sin x$

15 The expression  $\csc A \sin 2A$  is equivalent to

- 1)  $2 \sin A$
- 2) 2
- 3)  $2 \cos A$
- 4)  $2 \cot A$

16 The expression  $\frac{\sin 2x}{\sin(-x)}$  is equivalent to

- 1)  $-2 \sin x$