Answer Key · Lesson 5.4: Sum and Difference Formulas

School Launch · Trigonometry · Unit 5 · Worksheet A · for the parent

Key

1. $-\frac{\sqrt{2-\sqrt{3}}}{2}$

Use a sum or difference formula to find the exact value of $\sin -15^\circ$ (as $\sin(45^\circ - 60^\circ)$).

2. $-\frac{\sqrt{2-\sqrt{3}}}{2}$

Use a sum or difference formula to find the exact value of $\cos 105^\circ$ (as $\cos(45^\circ + 60^\circ)$).

3. $-\frac{\sqrt{2-\sqrt{3}}}{2}$

Use a sum or difference formula to find the exact value of $\sin -15^\circ$ (as $\sin(30^\circ - 45^\circ)$).

4. $\frac{\sqrt{2-\sqrt{3}}}{2}$

1. $\sin(A + B)$ formula with $A = 135^\circ$, $B = 30^\circ$.
2. Substitute exact values and simplify.

Use a sum or difference formula to find the exact value of $\sin 165^\circ$ (as $\sin(135^\circ + 30^\circ)$).

5. $\frac{\sqrt{\sqrt{3}+2}}{2}$

1. $\cos(A - B)$ formula with $A = 45^\circ$, $B = 30^\circ$.
2. Substitute exact values and simplify.

Use a sum or difference formula to find the exact value of $\cos 15^\circ$ (as $\cos(45^\circ - 30^\circ)$).

6. $\frac{\sqrt{\sqrt{3}+2}}{2}$

1. $\cos(A - B)$ formula with $A = 60^\circ$, $B = 45^\circ$.
2. Substitute exact values and simplify.

Use a sum or difference formula to find the exact value of $\cos 15^\circ$ (as $\cos(60^\circ - 45^\circ)$).

7. $\frac{\sqrt{\sqrt{3}+2}}{2}$

1. $\sin(A - B)$ formula with $A = 135^\circ$, $B = 30^\circ$.
2. Substitute exact values and simplify.

Use a sum or difference formula to find the exact value of $\sin 105^\circ$ (as $\sin(135^\circ - 30^\circ)$).

8. $-2 + \sqrt{3}$

1. $\tan(A - B)$ formula with $A = 30^\circ$, $B = 45^\circ$.
2. Substitute exact values and simplify.

Use a sum or difference formula to find the exact value of $\tan -15^\circ$ (as $\tan(30^\circ - 45^\circ)$).

9. $\frac{\sqrt{\sqrt{3}+2}}{2}$

1. $\sin(A + B)$ formula with $A = 60^\circ$, $B = 45^\circ$.
2. Substitute exact values and simplify.

Use a sum or difference formula to find the exact value of $\sin 105^\circ$ (as $\sin(60^\circ + 45^\circ)$).

10. $\frac{\sqrt{\sqrt{3}+2}}{2}$

1. $\sin(A + B)$ formula with $A = 45^\circ$, $B = 30^\circ$.
2. Substitute exact values and simplify.

Use a sum or difference formula to find the exact value of $\sin 75^\circ$ (as $\sin(45^\circ + 30^\circ)$).