Algebra 2 Name_____ ID: 1

Double Angle Formula 1

Date_____ Period____

Use a double-angle or half-angle identity to find the exact value of each expression.

1) $\cos \frac{7\pi}{8}$

2) $\sin \frac{5\pi}{8}$

3) $\sin \frac{11\pi}{12}$

4) $\sin 105°$

5) $\sin 67\frac{1}{2}°$

6) $\cos 15°$

7) $\cos \theta = -\frac{4}{5}$ and $\pi < \theta < \frac{3\pi}{2}$

Find $\cos \frac{\theta}{2}$

8) $\cos \theta = \frac{4}{5}$ and $0 < \theta < \frac{\pi}{2}$

Find $\sin 2\theta$

9) $\cos \theta = \frac{\sqrt{5}}{5}$ and $\frac{3\pi}{2} < \theta < 2\pi$

Find $\cos 2\theta$

10) $\cos \theta = \frac{\sqrt{5}}{5}$ and $0 < \theta < \frac{\pi}{2}$

Find $\tan \frac{\theta}{2}$

Algebra 2 Name_____ ID: 1

Double Angle Formula 1

Date_____ Period____

Use a double-angle or half-angle identity to find the exact value of each expression.

1) $\cos \frac{7\pi}{8}$

$-\frac{\sqrt{2+\sqrt{2}}}{2}$

2) $\sin \frac{5\pi}{8}$

$\frac{\sqrt{2+\sqrt{2}}}{2}$

3) $\sin \frac{11\pi}{12}$

$\frac{\sqrt{6}-\sqrt{2}}{4}$

4) $\sin 105°$

$\frac{\sqrt{6}+\sqrt{2}}{4}$

5) $\sin 67\frac{1}{2}°$

$\frac{\sqrt{2+\sqrt{2}}}{2}$

6) $\cos 15°$

$\frac{\sqrt{6}+\sqrt{2}}{4}$

7) $\cos \theta = -\frac{4}{5}$ and $\pi < \theta < \frac{3\pi}{2}$

Find $\cos \frac{\theta}{2}$

$-\frac{\sqrt{10}}{10}$

8) $\cos \theta = \frac{4}{5}$ and $0 < \theta < \frac{\pi}{2}$

Find $\sin 2\theta$

$\frac{24}{25}$

9) $\cos \theta = \frac{\sqrt{5}}{5}$ and $\frac{3\pi}{2} < \theta < 2\pi$

Find $\cos 2\theta$

$-\frac{3}{5}$

10) $\cos \theta = \frac{\sqrt{5}}{5}$ and $0 < \theta < \frac{\pi}{2}$

Find $\tan \frac{\theta}{2}$

$\frac{\sqrt{5}-1}{2}$