Trig/Precalc - CLARK Name_____

Double and Half Angle Formulas Practice

Date_____ Period____

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

1) $\tan\theta = \frac{3}{4}$ and $\pi < \theta < \frac{3\pi}{2}$

Find $\tan 2\theta$

2) $\tan\theta = \frac{5}{12}$ and $\pi < \theta < \frac{3\pi}{2}$

Find $\cos 2\theta$

3) $\tan\theta = -\frac{5}{12}$ and $\frac{3\pi}{2} < \theta < 2\pi$

Find $\cos 2\theta$

4) $\sin\theta = -\frac{7}{25}$ and $\frac{3\pi}{2} < \theta < 2\pi$

Find $\cos 2\theta$

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

Find $\tan 2\theta$

6) $\cos\theta = -\frac{2\sqrt{10}}{11}$ and $\pi < \theta < \frac{3\pi}{2}$

Find $\tan 2\theta$

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

7) $\cos\theta = \frac{12}{13}$ and $\frac{3\pi}{2} < \theta < 2\pi$

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

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

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

9) $\cos\theta = \frac{12}{13}$ and $0 < \theta < \frac{\pi}{2}$

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

10) $\sin\theta = \frac{3}{5}$ and $\frac{\pi}{2} < \theta < \pi$

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

11) $\cos\theta = \frac{24}{25}$ and $\frac{3\pi}{2} < \theta < 2\pi$

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

12) $\tan\theta = 4\sqrt{3}$ and $0 < \theta < \frac{\pi}{2}$

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

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Date_____ Period____

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

1) $\tan\theta = \frac{3}{4}$ and $\pi < \theta < \frac{3\pi}{2}$

Find $\tan 2\theta$

$\frac{24}{7}$

2) $\tan\theta = \frac{5}{12}$ and $\pi < \theta < \frac{3\pi}{2}$

Find $\cos 2\theta$

$\frac{119}{169}$

3) $\tan\theta = -\frac{5}{12}$ and $\frac{3\pi}{2} < \theta < 2\pi$

Find $\cos 2\theta$

$\frac{119}{169}$

4) $\sin\theta = -\frac{7}{25}$ and $\frac{3\pi}{2} < \theta < 2\pi$

Find $\cos 2\theta$

$\frac{527}{625}$

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

Find $\tan 2\theta$

$\frac{4\sqrt{2}}{7}$

6) $\cos\theta = -\frac{2\sqrt{10}}{11}$ and $\pi < \theta < \frac{3\pi}{2}$

Find $\tan 2\theta$

$-\frac{36\sqrt{10}}{41}$

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

7) $\cos\theta = \frac{12}{13}$ and $\frac{3\pi}{2} < \theta < 2\pi$

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

$-\frac{1}{5}$

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

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

$\frac{3\sqrt{10}}{10}$

9) $\cos\theta = \frac{12}{13}$ and $0 < \theta < \frac{\pi}{2}$

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

$\frac{\sqrt{26}}{26}$

10) $\sin\theta = \frac{3}{5}$ and $\frac{\pi}{2} < \theta < \pi$

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

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

11) $\cos\theta = \frac{24}{25}$ and $\frac{3\pi}{2} < \theta < 2\pi$

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

$\frac{\sqrt{2}}{10}$

12) $\tan\theta = 4\sqrt{3}$ and $0 < \theta < \frac{\pi}{2}$

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

$\frac{2\sqrt{7}}{7}$