

Double and Half Angle Identities Warm-up

Given $\cos x = \frac{4}{5}$ and $\frac{3\pi}{2} < x < 2\pi$, find:

a) $\sin 2x$

a) $\frac{-24}{25}$

b) $\sin \frac{x}{2}$

b) $\frac{\sqrt{10}}{10}$

c) $\cos \frac{x}{2}$

c) $\frac{-3\sqrt{10}}{10}$

d) $\tan 2x$

d) $\frac{-24}{7}$

Find the exact value using the double or half angle identities:

e) $\cos\left(\frac{7\pi}{3}\right)$

e) $\frac{1}{2}$

f) $\tan(105^\circ)$

f) $-2 - \sqrt{3}$