

$$(51) \cos 3x + \cos x = 2 \cos 2x \cos x$$

$$\cos(2x+x) + \cos(2x-x) =$$

$$\underbrace{\cos 2x \cos x}_{\text{wavy}} - \underbrace{\sin 2x \sin x}_{\text{wavy}} + \underbrace{\cos 2x \cos x}_{\text{wavy}} + \underbrace{\sin 2x \sin x}_{\text{wavy}} =$$

$$2 \cos 2x \cos x \checkmark$$

$$(50) \sin 3u = 3 \cos^2 u \sin u - \sin^3 u$$

$$\sin(2u+u) =$$

$$\sin u \cos u + \cos 2u \sin u =$$

$$\sin(u+u) \cos u + \cos(u+u) \sin u =$$

$$(\sin u \cos u + \cos u \sin u) \cos u + (\cos u \cos u - \sin u \sin u) \sin u =$$

$$\sin u \cos^2 u + \sin u \cos^2 u + \sin u \cos^2 u - \sin^3 u =$$

$$3 \sin u \cos^2 u - \sin^3 u \checkmark$$