Sum Rules:

1. $\cos(\theta_1 + \theta_2) = \cos(\theta_1) \cdot \cos(\theta_2) - \sin(\theta_1) \cdot \sin(\theta_2)$

2. $\sin(\theta_1 + \theta_2) = \cos(\theta_1) \cdot \sin(\theta_2) + \sin(\theta_1) \cdot \cos(\theta_2)$

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1. Find "double angle formulas" for sine and cosine. (Hint: write $2\theta = \theta + \theta$ and apply sum rules.)

Double Angle Rules:

(a) $\cos(2\theta) =$

(b) $\sin(2\theta) =$

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2. Find "difference rules" for sine and cosine. (Hint: write $\theta_1 - \theta_2$ as $\theta_1 + (-\theta_2)$ and use the sum rules. Simplify using even/odd functions.)

Difference Rules Rules:

(a) $\cos(\theta_1 - \theta_2) =$

(b) $\sin(\theta_1 - \theta_2) =$

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3. Find $\sin(15°)$ and $\cos(15°)$. (Hint: write $15°$ as the difference of two angles whose trig values we already know.)

4. Find $\sin(\arcsin(0.2) + \arcsin(0.4))$

5. Find $\cos(\arcsin(0.2) + \arccos(0.4))$

6. Find the value of x in the following triangle. (Hint: find $\overline{NT}$ and $\overline{AT}$.)