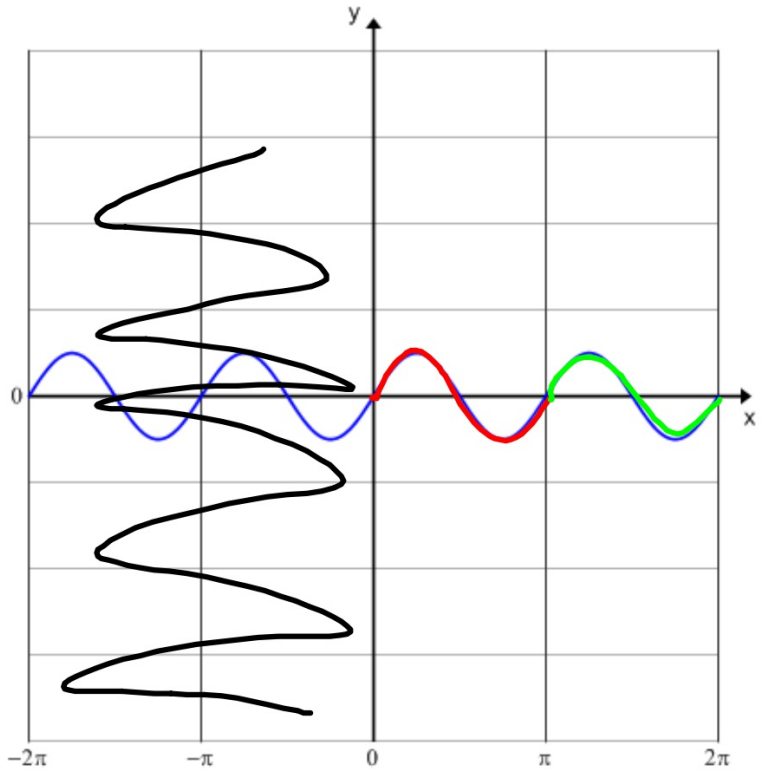
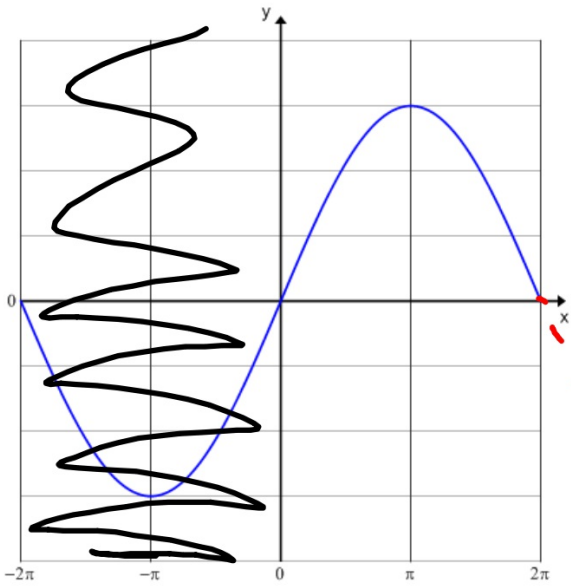
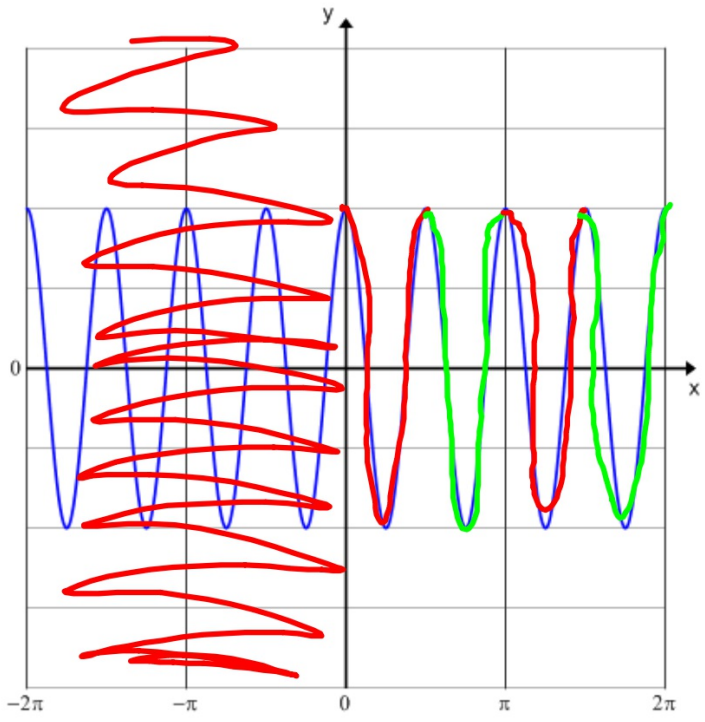


$$y = \frac{1}{2}\sin(2\theta)$$



$y = 3\sin\left(\frac{1}{2}x\right)$



$y = 2\cos(4\theta)$

① $y = 3\sin(2\theta - 12^\circ)$

Amplitude $= 3$

Period $= \frac{360}{2} = 180^\circ$

Phase shift $= \frac{-c}{b} = \frac{--12}{2} = 6^\circ$

② $y = 5\cos\left(\frac{1}{4}\theta + 8^\circ\right)$

Amplitude $= 5$

Period $= \frac{360}{\frac{1}{4}} = 1440^\circ$

Phase shift $= \frac{-c}{b} = \frac{-8}{\frac{1}{4}} = -32^\circ$

③ Give sine graph that has amplitude of 4, period of 90°, and phase shift of 4°.

$y = 4\sin\left(\frac{4}{\ }\theta - \frac{16}{\ }\right)$

period $= \frac{360}{b}$

$\frac{90^\circ}{1} = \frac{360}{b}$

$\frac{90b}{90} = \frac{360}{90}$

$b = 4$

p.s. $= \frac{-c}{b}$

$\frac{4^\circ}{1} = \frac{-c}{4}$

$-c = 16$

$c = -16$

(4) Sine equation with

$A = 2$ Period $= 720°$ P.S. $= 8°$

$$y = 2\sin\left(\frac{\frac{1}{2}}{b}\theta - \frac{4}{c}\right)$$

$P = \frac{360}{b}$

$\frac{720}{1} = \frac{360}{b}$

$720b = 360$

$\frac{720b}{720} = \frac{360}{720}$

$b = \frac{1}{2}$

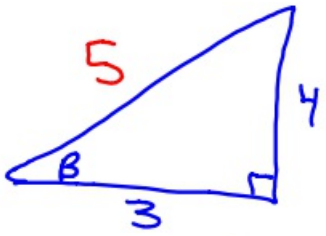
$P.S. = \frac{-c}{b}$

$\frac{8}{1} = \frac{-c}{\frac{1}{2}}$

$-c = 4$

$c = -4$

(5) If $\sin\alpha = \frac{9}{41}$ and $\tan\beta = \frac{4}{3}$, find $\cos(\alpha - \beta)$.



$a^2 + 9^2 = 41^2$

$a = 40$

$3^2 + 4^2 = c^2$

$25 = c^2$

$5 = c$

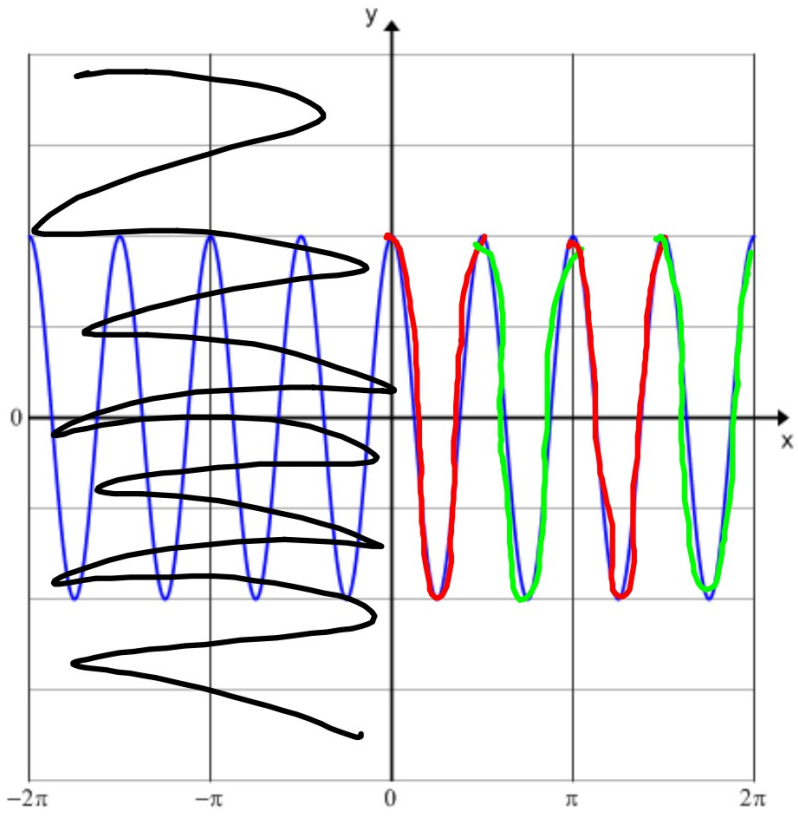
$\cos(\alpha - \beta) = \cos\alpha \cdot \cos\beta + \sin\alpha \cdot \sin\beta$

$\frac{40}{41} \cdot \frac{3}{5} + \frac{9}{41} \cdot \frac{4}{5}$

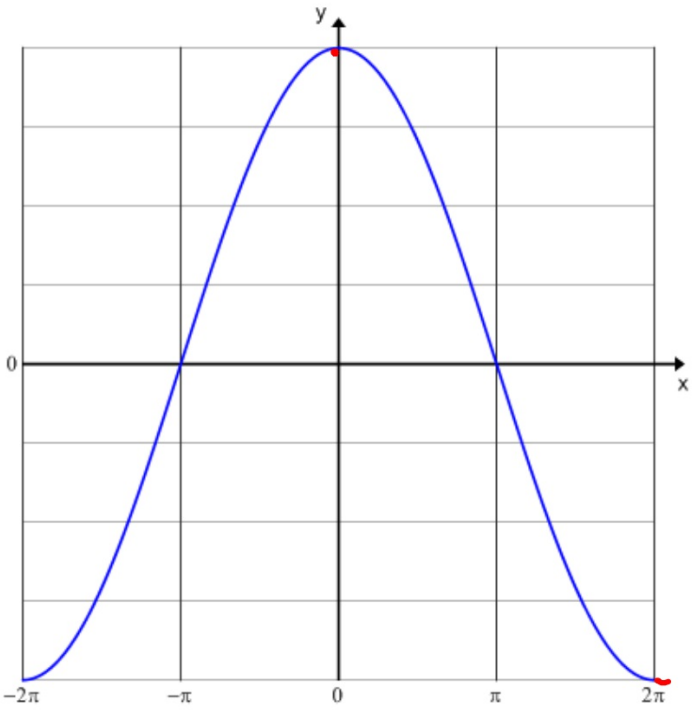
$\frac{120}{205} + \frac{36}{205}$

$\frac{156}{205}$

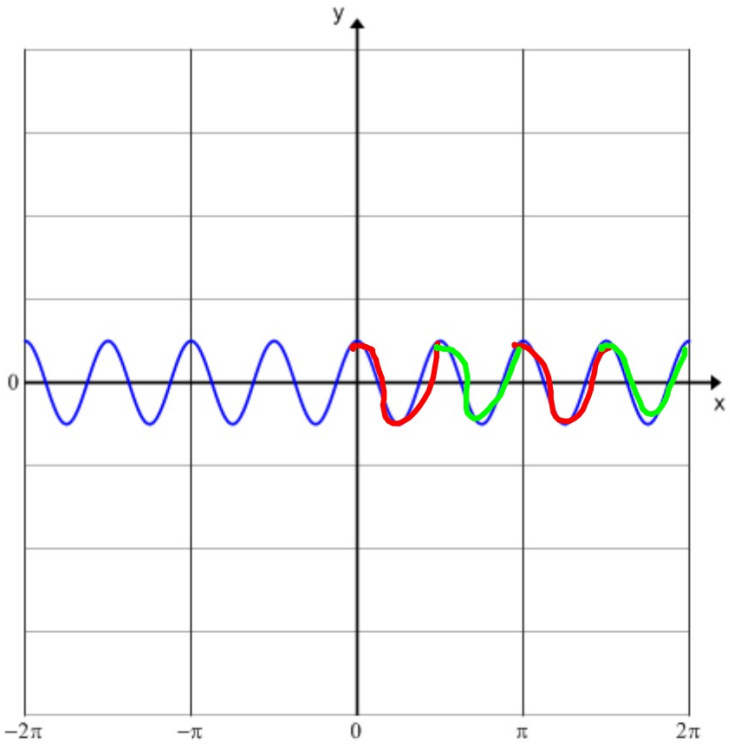
4-5-18 3rd Trig



$y = 2\cos(4\theta)$



$y = 4\cos\left(\frac{1}{2}\theta\right)$



$y = \frac{1}{2}\cos(4\theta)$

① $y = 4\cos\left(\frac{2}{b}\theta + \frac{8}{c}\right)$

Amplitude = 4

Period $= \frac{360}{2} = 180°$

Phase Shift $= \frac{-c}{b} = \frac{-8}{2} = -4$

② $y = \sin\left(\frac{\frac{1}{2}}{b}\theta + 4\right)$

Amplitude = 1

Period $= \frac{360}{\frac{1}{2}} = 720°$

Phase shift $= \frac{-c}{b} = \frac{-4}{\frac{1}{2}} = -8$

③ Give me the Sine equation that has

Amplitude = 2 Period = 90° Phase shift = 12°

$y = 2\sin\left(\frac{4}{}\theta - \frac{48}{}\right)$

period $= \frac{360}{b}$

$\frac{90}{1} = \frac{360}{b}$

$90b = 360$

$b = 4$

P.S. $= \frac{-c}{b}$

$\frac{12}{1} = \frac{-c}{4}$

$-c = 48$

$c = -48$

(4) Sine eq w/ Period = 720° P.S. = −4

$$y = \sin\left(\frac{1}{b}\theta + \frac{c}{b}\right)$$

$\text{Period} = \frac{360}{b}$

$\frac{720}{1} = \frac{360}{b}$

$\frac{720b}{720} = \frac{360}{720}$

$b = \frac{1}{2}$

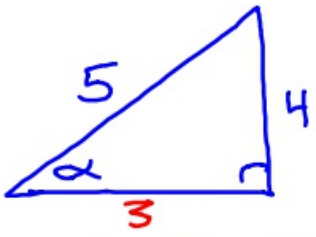
$\text{P.S.} = \frac{-c}{b}$

$\frac{-4}{1} = \frac{-c}{\frac{1}{2}}$

$-c = -2$

$c = 2$

(5) If $\sin\alpha = \frac{4}{5}$ and $\tan\beta = \frac{5}{12}$, find $\cos(\alpha - \beta)$.

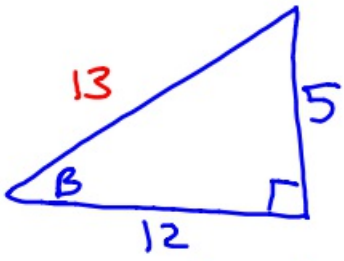


$a^2 + 4^2 = 5^2$

$a^2 + 16 = 25$

$a^2 = 9$

$a = 3$



$12^2 + 5^2 = c^2$

$169 = c^2$

$c = 13$

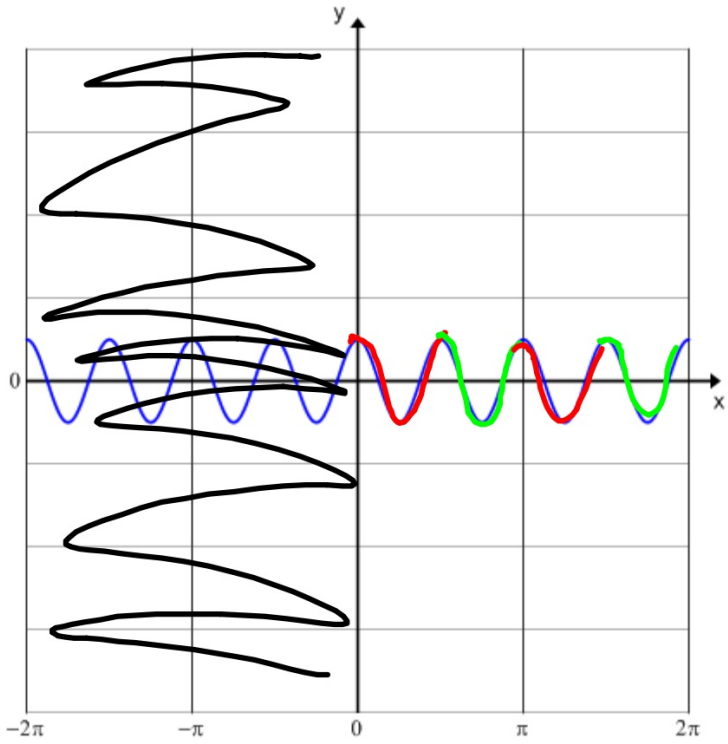
$\cos(\alpha - \beta) = \cos\alpha \cdot \cos\beta + \sin\alpha \cdot \sin\beta$

$\frac{3}{5} \cdot \frac{12}{13} + \frac{4}{5} \cdot \frac{5}{13}$

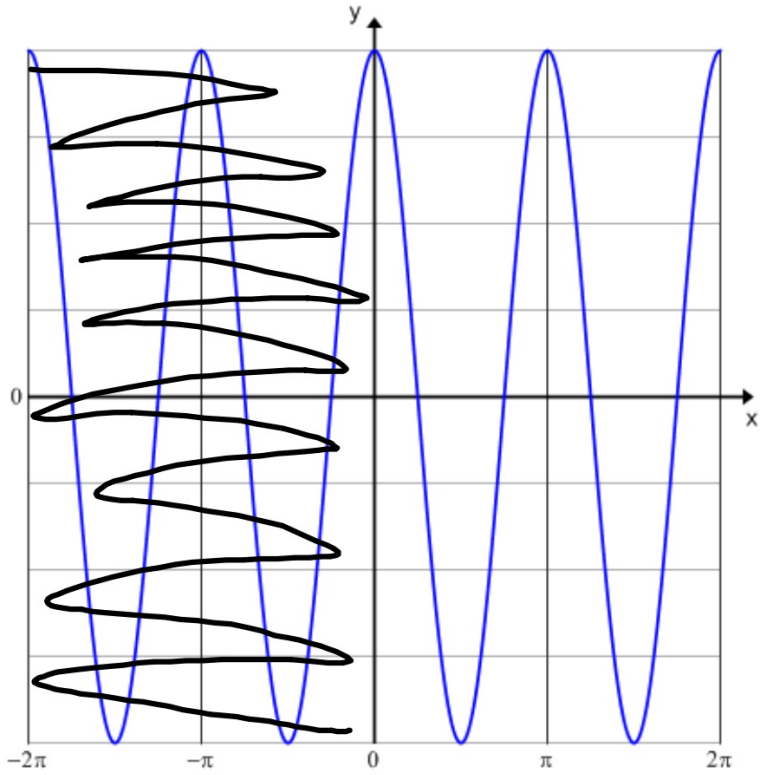
$\frac{36}{65} + \frac{20}{65}$

$\frac{56}{65}$

4-5-18 4th Trig



$y = \frac{1}{2}\cos\left(\frac{4}{b}\theta\right)$



$y = 4\cos(2\theta)$

① $y = 8 \sin\left(\frac{4}{b}\theta + 12\right)$

amplitude $= 8$

period $= \frac{360}{b} = \frac{360}{4} = 90^\circ$

phase shift $= -\frac{c}{b} = -\frac{12}{4} = -3$

② $y = \cos\left(\frac{1}{2}\theta + 4\right)$

Amplitude $= 1$

Period $= \frac{360}{\frac{1}{2}} = 720^\circ$

Phase Shift $= -\frac{c}{b} = \frac{-4}{\frac{1}{2}} = -8$

③ Give the sine equation that has amplitude $= 4$, period $= 180^\circ$, and phase shift $= 16^\circ$.

$y = 4 \sin\left(\frac{2}{b}\theta - \frac{32^\circ}{c}\right)$

period $= \frac{360}{b}$

$\frac{180^\circ}{1} = \frac{360}{b}$

$180b = 360$

$b = 2$

p.s. $= \frac{-c}{b}$

$\frac{16}{1} = \frac{-c}{2}$

$-c = 32$

$c = -32$

(4) Give sine equation with period = 720° & phase shift = 6°.

$$y = \sin\left(\frac{1}{b}\theta - \frac{3}{c}\right)$$

$P = \frac{360}{b}$

$\frac{720}{1} = \frac{360}{b}$

$720b = 360$

$b = \frac{1}{2}$

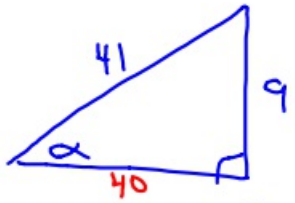
$P.S. = \frac{-c}{b}$

$\frac{6}{1} = \frac{-c}{\frac{1}{2}}$

$-c = 3$

$c = -3$

(4) If $\sin\alpha = \frac{9}{41}$ and $\cos B = \frac{5}{13}$, find $\cos(\alpha - B)$.

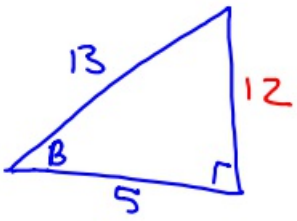


$a^2 + 9^2 = 41^2$

$a^2 + 81 = 1681$

$a^2 = 1600$

$a = 40$



$5^2 + b^2 = 13^2$

$25 + b^2 = 169$

$b^2 = 144$

$b = 12$

$\cos(\alpha - B) = \cos\alpha \cdot \cos B + \sin\alpha \cdot \sin B$

$\frac{40}{41} \cdot \frac{5}{13} + \frac{9}{41} \cdot \frac{12}{13}$

$\frac{200}{533} + \frac{108}{533}$

$\frac{308}{533}$