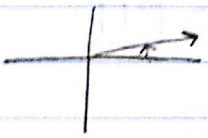
Key

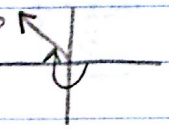
Trigonometry Review

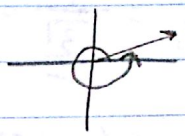
① $-323^\circ + 360 = \boxed{37^\circ}$

② $-4^\circ + 360 = \boxed{356^\circ}$

③ $370^\circ - 360 = \boxed{10^\circ}$

④ 15° 

⑤ -230° 

⑥ 295° 

⑦ $315^\circ \cdot \frac{\pi}{180^{4}} = \boxed{\frac{7\pi}{4}}$

⑧ $-450^{5} \cdot \frac{\pi}{180_{2}} = \boxed{\frac{-5\pi}{2}}$

⑨ $210^{7} \cdot \frac{\pi}{180_{6}} = \boxed{\frac{7\pi}{6}}$

⑩ $\frac{7\pi}{4_1} \cdot \frac{180^{45}}{\pi} = \boxed{315^\circ}$

⑪ $\frac{5\pi}{3_1} \cdot \frac{180^{60}}{\pi} = \boxed{300^\circ}$

⑫ $6\pi \cdot \frac{180}{\pi} = \boxed{1080^\circ}$

"exact values"

⑬ -120° OR 240°

$\cos(-120^\circ) = -1/2$

$\sin(-120^\circ) = -\sqrt{3}/2$

⑭ 135°

$\cos(135^\circ) = -\sqrt{2}/2$

$\sin(135^\circ) = \sqrt{2}/2$

⑮ $-\frac{2\pi}{3}$ OR $\frac{4\pi}{3}$

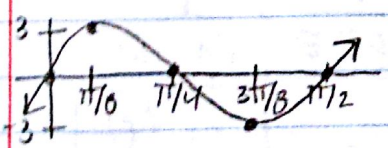
$\cos(-2\pi/3) = -1/2$

$\sin(-2\pi/3) = -\sqrt{3}/2$

⑯ $y = 3\sin 4x$

amp = 3

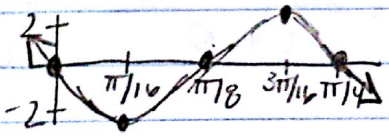
period $= \frac{2\pi}{4} = \pi/2$



⑰ $y = -2\sin 8x$

amp = 2

period $= \frac{2\pi}{8} = \frac{\pi}{4}$



⑱ amp = 1/4, period = 2, $a > 0$ means positive

$\boxed{1/4 \cos \pi\theta}$

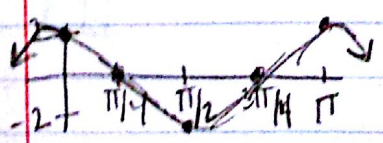
$\frac{2\pi}{b} = 2 \quad \frac{2\pi}{2} = b \quad b = \pi$

⑲ amp = 3, period = $\pi/2$, $a < 0$ means negative

$\boxed{-3\cos 4\theta}$

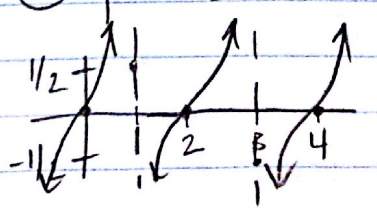
$\frac{2\pi}{b} \times \frac{\pi}{2} = \frac{4\pi}{\pi} = \frac{\pi b}{\pi} \quad b = 4$

⑳ $y = 2\cos 2\theta \quad \frac{2\pi}{2} = \pi$



㉑ $y = 1/2 \tan \pi/2\theta$

$\frac{2\pi}{\pi/2} = \frac{2\pi}{1} \cdot \frac{2}{\pi} = 4$



(22) $y = \cos x$, 4 to the left
$\boxed{y = \cos(x+4)}$

(23) $y = \sin x$, $\pi/4$ to right, 2 up
$\boxed{y = \sin(x - \pi/4) + 2}$

Honors

(24) $\sec(-30°)$ → $330°$
$\frac{1}{\cos} = \frac{1}{\frac{\sqrt{3}}{2}} = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{2\sqrt{3}}{3}}$

(25) $\csc(270°)$
$\frac{1}{\sin} = \frac{1}{-1} = \boxed{-1}$

(26) $\cot(210°)$
$\frac{\cos}{\sin} = \frac{-\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = \frac{-\sqrt{3}}{2} \cdot \frac{-2}{1} = \boxed{\sqrt{3}}$

(27) $\sec(90°)$
$\frac{1}{\cos} = \frac{1}{0} = \boxed{\text{undefined}}$

(28) $y = \cos(\theta - \pi) + 2$
Right by π, up 2

(30) $y = -\sin(x - \pi/4) + 1$
Reflect x axis, right $\pi/4$, up 1

$s = r\theta$

(32) $\frac{7\pi}{8_2} \cdot 4' = \frac{7\pi}{2} \approx \boxed{11\text{in}}$

(33) $\frac{2\pi}{3} \cdot 19 = \boxed{39.8\text{cm}}$

(34) $\frac{5\pi}{6_3} \cdot 4^2 = \boxed{10.5\text{ cm}}$

(35) $\tan^2\theta - \sec^2\theta$
$= \boxed{1}$

(36) $\sin\theta\sec\theta$
$\sin\theta\left(\frac{1}{\cos\theta}\right) = \frac{\sin\theta}{\cos\theta} = \boxed{\tan\theta}$

(37) $\frac{\tan\theta\sin\theta}{\cos\theta} = \frac{\frac{\sin\theta}{\cos\theta}\sin\theta}{\cos\theta} = \frac{\frac{1}{\cos\theta}}{\frac{\cos\theta}{\cos\theta}} = \frac{1}{\cos\theta} \cdot \frac{1}{\cos\theta}$
$1 = \frac{1}{\cos^2\theta} = \boxed{\sec^2\theta}$

start on right

(38) $\sin\theta\sec\theta\cot\theta = 1$
$\sin\theta\left(\frac{1}{\cos\theta}\right)\left(\frac{\cos\theta}{\sin\theta}\right)$
$\sin\theta\left(\frac{1}{\sin\theta}\right) = \boxed{1}$ ✓

(39) $\csc\theta = \cot\theta\sec\theta$
$= \left(\frac{\cos\theta}{\sin\theta}\right)\left(\frac{1}{\cos\theta}\right)$
$= \frac{1}{\sin\theta} = \boxed{\csc\theta}$

(40) $\cos\theta\csc\theta\tan\theta = 1$
$\cos\theta\left(\frac{1}{\sin\theta}\right)\left(\frac{\sin\theta}{\cos\theta}\right)$
$\frac{\cos\theta}{\sin\theta} \cdot \frac{\sin\theta}{\cos\theta}$
$= \boxed{1}$