Even more Review KEY

① Amp = $\frac{1}{2}$
   period = $\frac{2\pi}{4} = \frac{\pi}{2}$ $\boxed{B}$
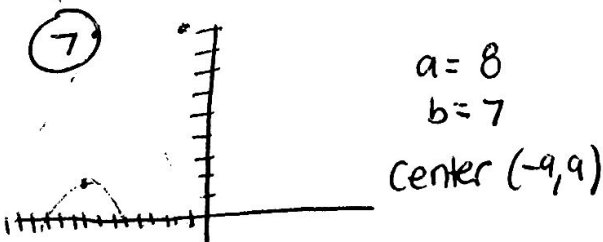
② amp = 3
   period = $\frac{2\pi}{\frac{1}{4}} = 8\pi$ $\boxed{D}$

③ csc $\frac{5\pi}{3}$ $-\frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \boxed{\frac{-2\sqrt{3}}{3}}$
   sin $\frac{5\pi}{3} = \frac{-\sqrt{3}}{2}$ $\boxed{D}$

④ sec $\frac{3\pi}{2}$ $\frac{1}{0}$ = $\underline{undefined}$
   cos $\frac{3\pi}{2} = \frac{0}{2} \quad \frac{0}{1}$ $\boxed{A}$

⑤ cos2θ = cos²θ − sin²θ OR 2cos²θ−1 OR $\underline{1-2\sin^2\theta}$
   $1 - 2\left(\frac{3}{5}\right)^2 = 1 - 2\left(\frac{9}{25}\right) = \frac{25}{25} - \frac{18}{25} = \boxed{\frac{7}{25}}$ $\boxed{D}$

⑥ $\begin{bmatrix} -1 & -1 & -2 \\ -2 & 3 & -4 \end{bmatrix} + \begin{bmatrix} 6 & -1 & -5 \\ -5 & -1 & 2 \end{bmatrix} + \begin{bmatrix} 0 & +5 & +1 \\ -5 & -0 & -1 \end{bmatrix}$

   $= \begin{bmatrix} 5 & 3 & -6 \\ -12 & 2 & -3 \end{bmatrix}$ $\boxed{c}$

⑦ $a = 8$
    $b = 7$
    Center $(-9,9)$

   $\frac{(x+9)^2}{64} - \frac{(y-9)^2}{49} = 1$ $\boxed{D}$

⑧ Center $(4,-3)$
   rad: 4
   $(x-4)^2 + (y+3)^2 = 16$
   $\boxed{c}$

⑨ $y = -2(x-6)^2 - 5$

$-\frac{1}{2}(y+5) = \frac{-2(x-6)^2}{-2}$

$(x-6)^2 = -\frac{1}{2}(y+5)$

vertex $(6,-5)$

opens down

AOS: $x = 6$ $\boxed{A}$

⑩ $\frac{(x-3)^2}{4} + \frac{(y-1)^2}{16} = 1$ vertical

$a = 4$ $b = 2$

center $(3,1)$ $\boxed{C}$

⑪ $\frac{4}{14} \cdot \frac{5}{13} \cdot \frac{5}{12} = \frac{100}{2184} = \frac{25}{546}$ $\boxed{A}$

⑫ $\arctan(-\sqrt{3}) = \boxed{\dfrac{-\pi}{3}}$

⑬ $\arcsin(1) = \boxed{\dfrac{\pi}{2}}$

⑭ $\tan(\arcsin -\frac{\sqrt{3}}{2})$

$\tan(-\frac{\pi}{3}) = \boxed{-\sqrt{3}}$

⑮ $\sin(\arccos\frac{1}{2})$

$\sin(\frac{\pi}{3}) = \boxed{\dfrac{\sqrt{3}}{2}}$

⑯ $\tan x = \dfrac{\sin y}{\cos x} = \dfrac{\frac{2}{3}}{\frac{\sqrt{17}}{3}} = \dfrac{2}{\sqrt{17}} \cdot \dfrac{\sqrt{17}}{\sqrt{17}} = \boxed{\dfrac{2\sqrt{17}}{17}}$

⑰ $2\sin^2 x - 9\sin x = -4$

$2\sin^2 x - 9\sin x + 4 = 0$

$(2\sin x - 1)(\sin x - 4) = 0$

$2\sin x - 1 = 0$ $\sin x - 4 = 0$

$2\sin x = 1$ $\cancel{\sin x = 4}$

$\sin x = \frac{1}{2}$

$\boxed{x = \frac{\pi}{6}, \frac{5\pi}{6}}$ $\boxed{B}$

⑱ $\sin 35° \cos 25° + \cos 35° \sin 25°$

$= \sin(35° + 25°) = \sin 60°$ $\boxed{A}$

⑲ $\cos 2A = 2\cos^2 A - 1$

$= 2(\frac{4}{5})^2 - 1 = 2(\frac{16}{25}) - 1$

$= \frac{32}{25} - \frac{25}{25} = \boxed{\dfrac{7}{25}}$

⑳ $\langle 10\cos 0°, 10\sin 0°\rangle + \langle 10\cos 85°, 10\sin 85°\rangle$

$= \langle 10, 0\rangle + \langle .872, 9.962\rangle$

$= \langle 10.872, 9.962\rangle$

$\sqrt{(10.872)^2 + (9.962)^2} = \boxed{14.75 \text{ lb}}$

㉑ $2\langle -1, 3\rangle - 3\langle 5, -2\rangle$

$\langle -2, 6\rangle + \langle -15, 6\rangle$

$\boxed{\langle -17, 12\rangle}$