

$$[2] [a] \boxed{\frac{1}{2}(8+3) = \frac{5}{2}} \textcircled{\frac{1}{2}}$$

$$[b] \boxed{\frac{1}{2}(8-3) = \frac{1}{2}} \textcircled{\frac{1}{2}}$$

$$[c] \boxed{x = -\frac{1}{6}} \textcircled{\frac{1}{2}}$$

$$[d] \boxed{\frac{3}{2}P = \frac{7}{12} - \frac{1}{6} = \frac{7+2}{12} = \frac{9}{12} = \frac{3}{4}} \textcircled{1} \rightarrow \boxed{P = \frac{3}{4} \cdot \frac{2}{3} = \frac{1}{2}} \textcircled{\frac{1}{2}}$$

$$[e] \boxed{\frac{2\pi}{B} = \frac{1}{2} \rightarrow B = 4\pi} \textcircled{1}$$

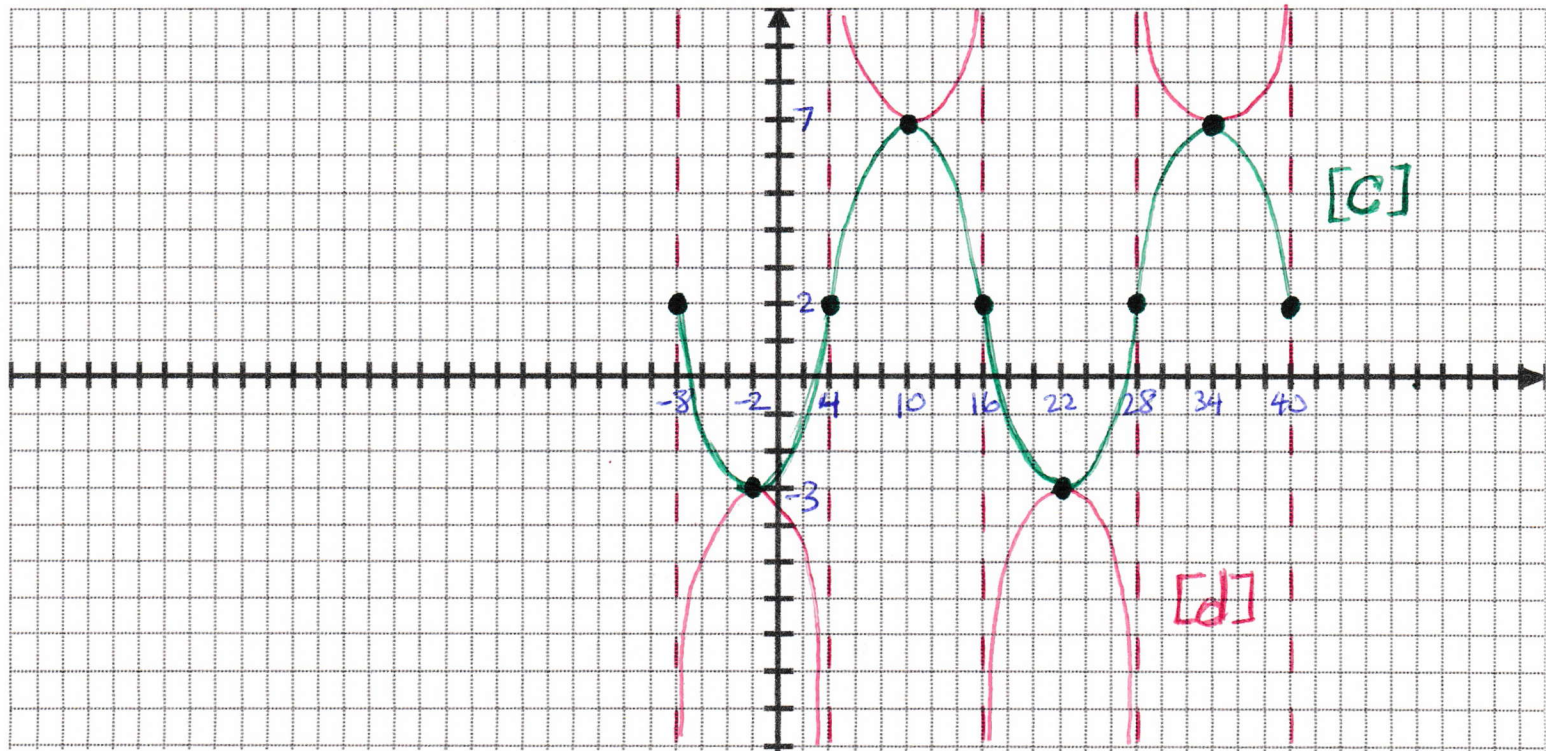
$$\textcircled{4} \boxed{y = -\frac{1}{2} \cos 4\pi(x + \frac{1}{6}) + \frac{5}{2} = -\frac{1}{2} \cos(4\pi x + \frac{2\pi}{3}) + \frac{5}{2}}$$

$[3][a]$ MAX $|2+5=7| \textcircled{\frac{1}{2}}$ AMP $|5| \textcircled{\frac{1}{2}}$
 MID $|2| \textcircled{\frac{1}{2}}$ PERIOD $|\frac{2\pi}{\frac{\pi}{12}} = 2\cancel{\pi} \cdot \frac{12}{\cancel{\pi}} = 24| \textcircled{1}$
 MIN $|2-5=-3| \textcircled{\frac{1}{2}}$ SHIFT $|\frac{\pi}{12}x + \frac{2\pi}{3} = 0|$ MUST HAVE BOTH
 $\frac{\pi}{12}x = -\frac{2\pi}{3} \textcircled{1}$
 $|x = -\frac{2\cancel{\pi}}{\cancel{3}} \cdot \frac{12}{\cancel{\pi}} = -8|$

$[b] \frac{1}{4}P=6$ 
 $|(-8, 2) (-2, -3) (4, 2) (10, 7) (16, 2)$
 $(22, -3) (28, 2) (34, 7) (40, 2)| \textcircled{4\frac{1}{2}}$

$[e] |x=-8, x=4, x=16, x=28, x=40|$ ANY 3; MUST HAVE X = $\textcircled{3}$

$[f] |(-\infty, -3] \cup [7, \infty)| \textcircled{2}$



$$[4][a] \quad \boxed{3\pi x = \frac{\pi}{2} + n\pi} \quad \textcircled{1}$$

$$x = \left(\frac{\pi}{2} + n\pi\right) \frac{1}{3\pi}$$

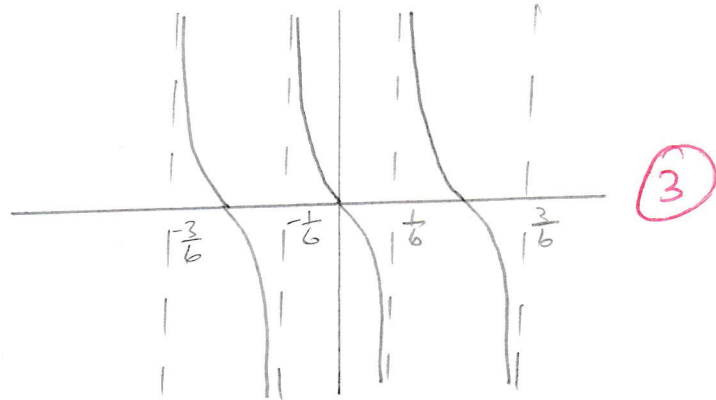
$$\textcircled{1} \quad \boxed{x = \frac{1}{6} + \frac{n}{3}}, n \in \mathbb{Z}$$

$$[c] \quad \{x \in \mathbb{R} \mid \boxed{x \neq \frac{1}{6} + \frac{n}{3}}, \textcircled{1} \\ n \in \mathbb{Z}\}$$

$$[d] \quad \boxed{\begin{array}{l} \frac{2x}{5} = n\pi \\ x = \frac{5n\pi}{2} \end{array}} \quad \textcircled{1} \quad \begin{array}{l} \text{MUST HAVE} \\ \text{BOTH} \end{array}, n \in \mathbb{Z}$$

$$[f] \quad \{x \in \mathbb{R} \mid \boxed{x \neq \frac{5n\pi}{2}}, \textcircled{1} \\ n \in \mathbb{Z}\}$$

[b]



[d]

