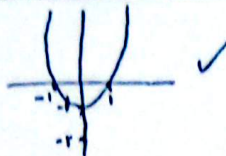


✓ $\left. \begin{aligned} y_1'' &= 2x_1' - 1 \\ y_2'' &= 2x_2' - 1 \end{aligned} \right\} \xrightarrow{y_1' = x_1' - 1, y_2' = x_2' - 1} y_1'' = 2x_1' - 1 = 2x_2' - 1 = y_2'' \Rightarrow y_1' = y_2' \Rightarrow y_1 = y_2 + C$ ۱.۷۵

✓ $\left. \begin{aligned} y_1'' + y_1 &= 1 \\ y_2'' + y_2 &= 1 \end{aligned} \right\} \xrightarrow{y_1' = y_2' = y'} y_1'' + y_1 = y_2'' + y_2 = y'' + y = 1 \Rightarrow (y_1 - y_2)'' + (y_1 - y_2) = 0 \Rightarrow (y_1 - y_2) = 0 \Rightarrow y_1 = y_2$

✓ $y = x^2 - 1 \rightarrow$  ✓ $|y| + xy = x^2 - 1 \Rightarrow |y| = 1 \Rightarrow y = \pm 1$ ۲

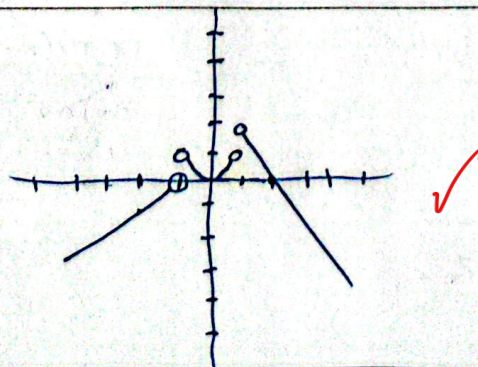
✓ $\left. \begin{aligned} y_1'' &= -x_1' + 2x_1 - 1 \\ y_2'' &= -x_2' + 2x_2 - 1 \end{aligned} \right\} \xrightarrow{x_1 = x_2 = x} y_1'' = y_2'' = -x' + 2x - 1 \Rightarrow y_1' = y_2' = -x + C \Rightarrow y_1 = y_2 = -\frac{1}{2}x^2 + Cx + D$ ۲

الف) $\tan \frac{\pi}{3} = \frac{\sin \frac{\pi}{3}}{\cos \frac{\pi}{3}} = \frac{\frac{\sqrt{3}}{2}}{\frac{1}{2}} = \sqrt{3}$ ✓ $\Rightarrow \cot \frac{\sqrt{3}\pi}{6} = \frac{\cos \frac{\sqrt{3}\pi}{6}}{\sin \frac{\sqrt{3}\pi}{6}} = \frac{\frac{\sqrt{3}}{2}}{-\frac{1}{2}} = -\sqrt{3}$ ✓ ۲

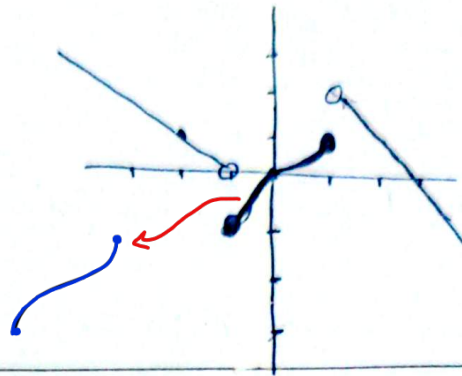
ج) $\tan 330^\circ = \frac{\sin 330^\circ}{\cos 330^\circ} = \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}}$ ✓ $\Rightarrow \cot 180^\circ = \frac{\cos 180^\circ}{\sin 180^\circ} = \frac{-1}{0}$ ۳

الف) $\sin \alpha = \frac{1}{\sqrt{2}} \Rightarrow \alpha = \frac{\pi}{4}, \frac{3\pi}{4}$ ✓ ۲

ب) $\cos \alpha = \frac{\sqrt{2}}{2} \Rightarrow \alpha = \frac{\pi}{4}, \frac{7\pi}{4}$ ✓ ۴



۵



1.1.5

6

✓ 1) $\rightarrow 2, 3, 4$ $\frac{2}{-d} + \frac{3}{d} - \frac{4}{d} +$

2

7

✓ 1) $\rightarrow 2, 3, 4, 5$ $\frac{2}{+d} - \frac{3}{d} - \frac{4}{d} +$

2

8

✓ 1) $2, 4, 5$ $\frac{2}{-d} + \frac{4}{d} - \frac{5}{d} +$

✓ 1) $2, 3, 4, 5$ $\frac{2}{+d} - \frac{3}{d} - \frac{4}{d} +$

✓ 1) $\frac{(x+2)(x-1)(x-1)}{x^3 - 3x^2 + 2x} \rightarrow -2, 1, 3$

$$\frac{x^3 - 3x^2 + 2x}{x^3 - 3x^2 + 2x} = \frac{x^3 - 3x^2 + 2x}{x^3 - 3x^2 + 2x} = 1$$

✓ 1) $\frac{(x-2)(x-1)}{(x-3)(x-1)} \rightarrow 1, 2, 3$

$$\frac{(x-2)(x-1)}{(x-3)(x-1)} = \frac{x-2}{x-3}$$

2

9

✓ 1) $\frac{x^2(x^2-1)}{x^2(x^2+2x+1)} \rightarrow 1, -1, 0, 0$

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

✓ 1) $\frac{x^2(x^2-1)}{x^2(x^2+2x+1)} \rightarrow 1, -1, 0, 0$

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1.1.5

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* عبارت همواره مثبت است.