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(651)

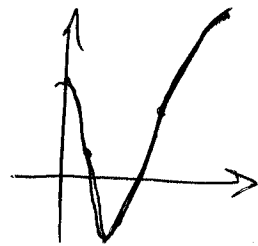
10) $y = 2x - \sin 2x + 16 \cos x \rightarrow y' = 2 - 2 \cos 2x - 16 \sin x$

$y' = 2 - 2(1 - \sin^2 x) - 16 \sin x = 2 \sin^2 x - 16 \sin x$

$0 = 2 \sin x (\sin x - 8)$

$\sin x = 0 \rightarrow x = \pi k$

max (0, +16) min (π , $2\pi - 16$) max (2π , $4\pi + 16$)



$y'' = -4 \sin x \cos x - 16 \cos x = -4 \cos x (\sin x + 4)$

$y''(\pi) > 0$, $y'' = 0 = -4 \cos x (\sin x + 4) \rightarrow \cos x = 0$
 $(\frac{\pi}{2}, \pi)$ $(\frac{3\pi}{2}, 2\pi)$ $x = \frac{\pi}{2} + \pi k$

$y'' > 0$ $-4 \cos x (\sin x + 4) > 0$
 $\cos x < 0$ $\sin x > -4$ $\therefore \cup$
 $\frac{\pi}{2} < x < \frac{3\pi}{2}$

$0 < x < \frac{\pi}{2}$ \cup $\frac{3\pi}{2} < x < 2\pi$ $\therefore \cap$

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10) $y = \sin^2 x + 2 \cos x$

$y' = 2 \sin x \cos x - 2 \sin x = 2 \sin x (\cos x - 1) = 0$

$\sin x = 0$ $\cos x = 1$
 $x = \pi k$ $x = 2\pi k$

max (0, 2) min (π , -2)
 min ($-\frac{\pi}{2}$, 1) max ($\frac{3\pi}{2}$, 1)

בסיס קבוע

$y'' = 2 \cos 2x - 2 \cos x$

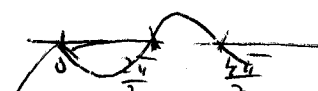
$y''(0) = 0$

$y''(\pi) = 4$

בסיס קבוע, בסיס קבוע, בסיס קבוע

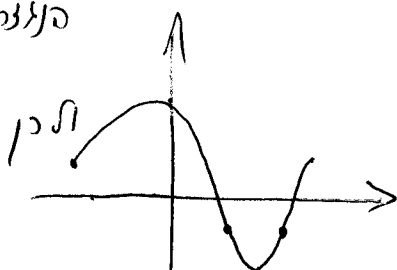
10) $y'' = 2 \cos 2x - 2 \cos x = 2(2 \cos^2 x - 1) - 2 \cos x = 4 \cos^2 x - 2 \cos x - 2 = 0$

$\cos x = 1$ $\cos x = -\frac{1}{2}$
 $x = 2\pi k$ $x = \pm \frac{2\pi}{3} + 2\pi k$ \rightarrow $(\frac{0}{3}, \frac{2}{4})$, $(\frac{2\pi}{3}, -\frac{1}{4})$, $(\frac{4\pi}{3}, -\frac{1}{4})$



כאשר הפונקציה מתחילה

$x < \frac{2\pi}{3}$ \cup $x > \frac{4\pi}{3}$: $y'' < 0$: \cap
 $\frac{4\pi}{3} < x < \frac{2\pi}{3}$: בתחום של הפסוקה
 $\frac{2\pi}{3} < x < \frac{4\pi}{3}$: \cup



$\frac{\pi}{2} < x < \frac{3\pi}{2}$