

דפי מבחן/בווחן



מקצוע _____ נושא _____

שם התלמיד/ה _____ כיתה _____ תאריך _____

מבשרת ציון

$$\begin{cases} a_1 = -2 \\ a_{n+1} = \frac{a_n}{1-a_n} \end{cases}$$

$$a_n = \frac{2}{A-Bn} \quad n=2, n=1 \quad \text{נכין } (1)$$

$$a_1 = \frac{2}{A-B} = -2 \Rightarrow \underline{A-B = -1}$$

$$a_2 = \frac{-2}{1+2} = -\frac{2}{3} = \frac{2}{A-2B} = -\frac{2}{3}$$

$$A-2B = -3$$

$$\begin{cases} A-B = -1 \\ A-2B = -3 \end{cases} \Rightarrow \begin{cases} A = 1 \\ B = 2 \end{cases}$$

$$a_n = \frac{2}{1-2n} \Rightarrow \underline{a_1 = -2} \quad n=1. \text{ סבס } (1)$$

$$a_k = \frac{2}{1-2k} \quad k=2 \text{ קנחה אין קדקצוין } (2)$$

$$a_{k+1} = \frac{2}{1-2(k+1)} = -\frac{2}{1+2k} \quad k=k+1 \text{ נחסר אין קדקצוין } (3)$$

$$a_{k+1} = \frac{a_k}{1-a_k} = \frac{\frac{2}{1-2k}}{1-\frac{2}{1-2k}} = \frac{\frac{2}{1-2k}}{\frac{(1-2k)-2}{1-2k}} = \frac{2}{1-2k-2} = -\frac{2}{1+2k} \quad \checkmark$$

קנחה אין קדקצוין

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מבשרת ציון

נושא

מקצוע

תאריך

כיתה

שם התלמיד/ה

$$C_n = 3 + (n-1)2 = 2n + 1$$

$$12 \cdot 5^{2n+1} + 8^{n+1} \quad \vdots 68$$

$$12 \cdot 5^3 + 8^2 = 1568 \quad h=1 \text{ נט' } (1)$$

$$1568 : 68 = 23$$

$$12 \cdot 5^{2n+1} + 8^{n+1} \quad \vdots 68 \quad n=k \quad (2)$$

$$12 \cdot 5^{2(k+1)+1} + 8^{k+1+1} \quad \vdots 68 \quad h=k+1 \quad (3)$$

$$12 \cdot 5^{2k+1+2} + \frac{2h \cdot 17}{8^{k+1+1}} =$$

$$\begin{aligned} &= 25 \cdot 12 \cdot 5^{2k+1} + 8 \cdot 8^{k+1} = \\ &= 25(12 \cdot 5^{2k+1} + 8^{k+1} - 8^{k+1}) + 8 \cdot 8^{k+1} = \\ &= 25 \underbrace{(12 \cdot 5^{2k+1} + 8^{k+1})}_{\vdots 68} - 17 \cdot 8^{k+1} = \\ &= \underbrace{17 \cdot 8 \cdot 8^k}_{\vdots 68} \end{aligned}$$

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מבשרת ציון

3

$$f(x) = \frac{3 \sin x - 2 \sin^3 x}{b x}$$

$$b > 0$$

$$0 < x < \pi$$

$$S = \lim_{x \rightarrow 0} \frac{3 \sin x - 2 \sin^3 x}{b x} = \frac{1}{b} (3 \sin x - 2 \sin^3 x)$$

$$S'(x) = \frac{1}{b} (3 \cos x - 2 \cdot 3 \sin^2 x \cdot \cos x) =$$

$$= \frac{3}{b} \cdot \cos x (1 - 2 \sin^2 x) = \frac{6}{b} \cos x \left(\sin x - \frac{\sqrt{2}}{2} \right) \left(\sin x + \frac{\sqrt{2}}{2} \right)$$

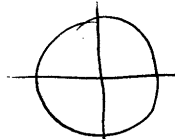
$$x = \frac{\pi}{2} + 2\pi k$$

$$0 < x < \pi$$

$$x = \frac{\pi}{2}$$

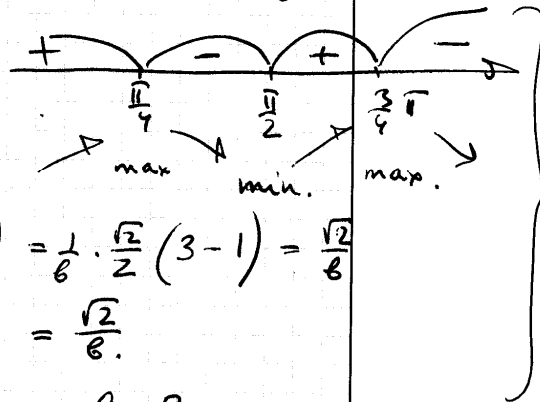
$$x = \frac{\pi}{4} + 2\pi k \Rightarrow x = \frac{\pi}{4}$$

$$x = \frac{3\pi}{4} + 2\pi k \Rightarrow x = \frac{3\pi}{4}$$



$$x = -\frac{\pi}{4} + 2\pi k \Rightarrow x \notin \mathbb{R}$$

$$x = -\frac{3\pi}{4} \Rightarrow x \notin \mathbb{R}$$



$$S\left(\frac{\pi}{4}\right) = \frac{1}{b} \left(3 \frac{\sqrt{2}}{2} - 2 \left(\frac{\sqrt{2}}{2}\right)^3 \right) = \frac{1}{b} \cdot \frac{\sqrt{2}}{2} (3 - 1) = \frac{\sqrt{2}}{b}$$

$$S\left(\frac{3\pi}{4}\right) = \frac{1}{b} \left(3 \frac{\sqrt{2}}{2} - 2 \left(\frac{\sqrt{2}}{2}\right)^3 \right) = \frac{\sqrt{2}}{b}$$

$$\Rightarrow \frac{\sqrt{2}}{b} = \frac{\sqrt{2}}{2} \Rightarrow b = 2$$

$$S\left(\frac{\pi}{2}\right) = \frac{1}{b}$$

$$S(x) \rightarrow 0 \text{ as } x \rightarrow \pi$$

$$S(x) \rightarrow 0 \text{ as } x \rightarrow 0$$

סוף ק"ס

2

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4

$$f(x) = \frac{1-2x}{(x^2-x-6)^2}$$

$x \neq -2, x \neq 3$ $x^2-x-6 \neq 0$.c

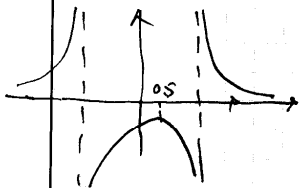
$\lim_{x \rightarrow \infty} f(x) = 0 \Rightarrow y=0$.d

$\lim_{x \rightarrow -2} \frac{1-2x}{(x^2-x-6)^2} = \left[\frac{5}{0} \right] = \infty \Rightarrow x=-2$

$\lim_{x \rightarrow 3} \frac{1-2x}{(x^2-x-6)^2} = \left[\frac{-5}{0} \right] = \infty \Rightarrow x=3$

$x=0 \Rightarrow f(0) = \frac{1}{36}$ $(0, \frac{1}{36})$.e

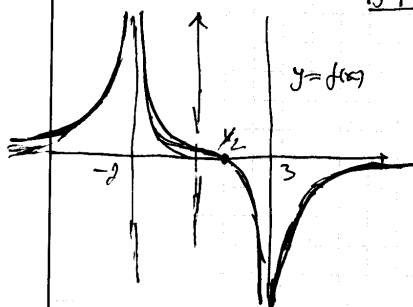
$f(x)=0$ ($y=0$) $\Rightarrow x = \frac{1}{2}$ $(\frac{1}{2}, 0)$



$x < -2$	$-2 < x < 3$	$3 < x < \infty$
+	-	+
↘	↘	↗

($\frac{1}{2}, 0$) נקודת יציאה

$x < -2$	$-2 < x < \frac{1}{2}$	$\frac{1}{2} < x < 3$	$3 < x < \infty$
+	+	-	-
↘	↘	↗	↗



$$\int_4^6 \frac{1-2x}{(x^2-x-6)^2} dx = \int_4^6 \frac{d(x^2-x-6)}{(x^2-x-6)^2} = \left. \frac{-1}{x^2-x-6} \right|_4^6 = \left(\frac{-1}{36-6-6} - \frac{-1}{16-4-6} \right) = \frac{1}{6} - \frac{1}{24} = \frac{1}{8}$$

דפי מבחן/בוטון

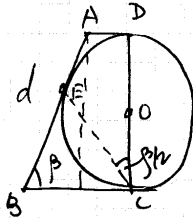
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מבשרת ציון

5



$$EB = BC, AE = AD \text{ ו' } AD + BC = d \quad .1$$

$$DC = d \cdot \sin \beta$$

$$2d = 2d + d \sin \beta \quad .2$$

$$S_{ABC} = \frac{d \cdot d \sin \beta}{2} = \frac{1}{2} d^2 \sin \beta$$

$$\begin{cases} 2d + d \sin \beta = 25 \\ \frac{1}{2} d^2 \sin \beta = 25 \end{cases} \quad .3$$

$$\sin \beta = \frac{25 - 2d}{d} \Rightarrow \frac{1}{2} \cdot d^2 \cdot \frac{25 - 2d}{d} = 25$$

$$25d - 2d^2 = 50$$

$$2t^2 - 25d + 50 = 0 \quad d_{1,2} = \frac{25 \pm 15}{4} = \begin{cases} d_1 = 10 \\ d_2 = \frac{5}{2} \end{cases}$$

$$\sin \beta = \frac{25 - 20}{10} = \frac{1}{2} \Rightarrow \beta = 30^\circ$$

$$\sin \beta = \frac{25 - 5}{\frac{5}{2}} = \frac{20 \cdot 2}{5} = 8 > 1 \Rightarrow \emptyset$$