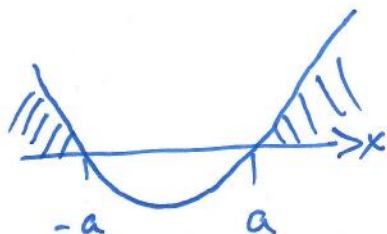


6 הנקודות

$$f(x) = \frac{x^2}{\sqrt{x^2 - a^2}}$$

$$a > 0$$



$$\boxed{\begin{matrix} a < x \\ x < -a \end{matrix}}$$

$$x^2 - a^2 > 0$$

הנ"ל

(1)

$$x^2 - a^2 = 0$$

$$x^2 = a^2$$

$$x = \pm a$$

$$f(x) = f(-x)$$

(2)

$$\frac{x^2}{\sqrt{x^2 - a^2}} \stackrel{?}{=} \frac{(-x)^2}{\sqrt{(-x)^2 - a^2}}$$

$$\frac{x^2}{\sqrt{x^2 - a^2}} = \frac{x^2}{\sqrt{x^2 - a^2}} \quad \checkmark$$

$$x=0 \quad \text{! } y \text{ נכונה}$$

$$y=0 \quad \text{! } x \text{ נכונה} \quad (1)$$

0-2 הנקודות

~~(0,0)~~

$$0 = \frac{x^2}{\sqrt{x^2 - a^2}}$$

$$\boxed{0=x}$$

~~(0,0)~~

החלקה השנייה, כל x כלפי ימין: $x=a$
 כלפי שמאל: $x=-a$ (2)

$$f'(x) = \frac{2x\sqrt{x^2-a^2} - x^2 \cdot \frac{2x}{2\sqrt{x^2-a^2}}}{x^2-a^2} \quad (3)$$

$$f'(x) = \frac{2x\sqrt{x^2-a^2} - \frac{x^3}{\sqrt{x^2-a^2}}}{x^2-a^2}$$

$$f'(x) = \frac{2x(x^2-a^2) - x^3}{(x^2-a^2)\sqrt{x^2-a^2}} = \frac{2x^3 - 2xa^2 - x^3}{(x^2-a^2)\sqrt{x^2-a^2}}$$

$$f'(x) = \frac{x(x^2-2a^2)}{(x^2-a^2)\sqrt{x^2-a^2}}$$

$$x(x^2-2a^2)=0$$

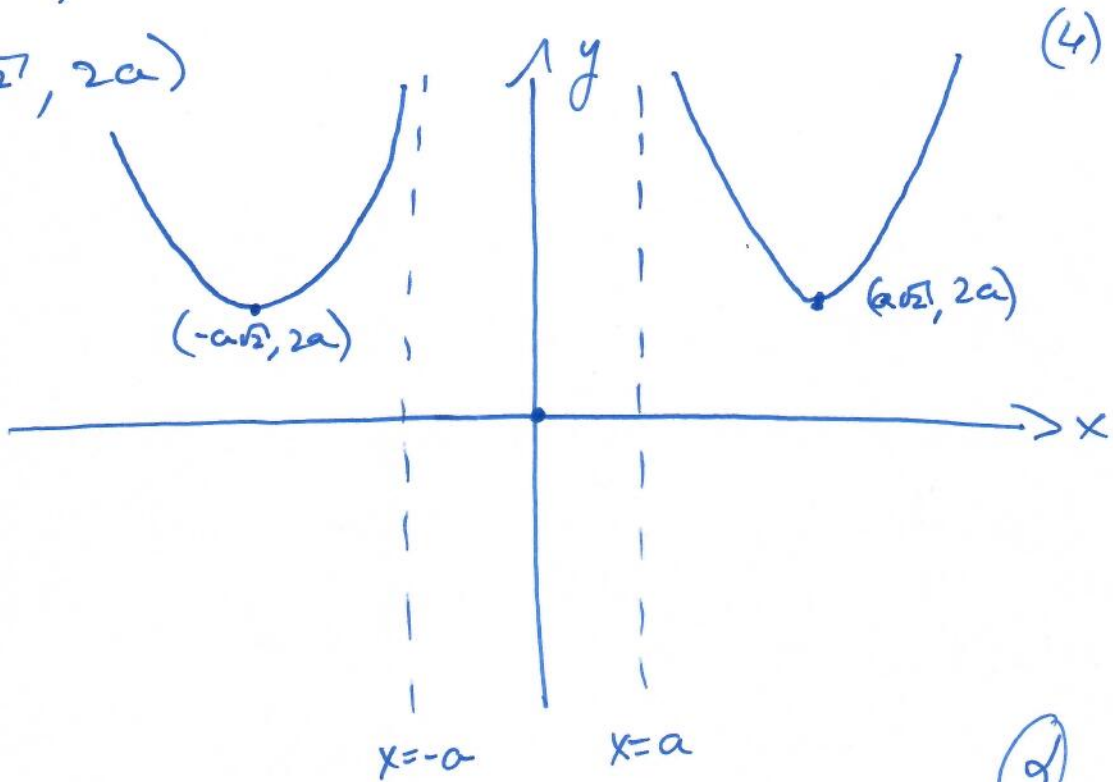
~~$x=0$~~
 $(0,0)$

$$\begin{aligned} &\rightarrow x^2=2a^2 \\ &\boxed{x = \pm a\sqrt{2}} \end{aligned}$$

X	$-2a$	$-a\sqrt{2}$	$-1.2a$	$-a$	a	$1.2a$	$a\sqrt{2}$	$2a$
$f'(x)$	-	0	+	/	/	-	0	+
$f(x)$	↘	m n	↗	/	/	↘	m n	↗

$$\min(-a\sqrt{2}, 2a)$$

~~$$\min(a\sqrt{2}, 2a)$$~~



(9)

$$(f(x)^2)' = 2f(x) \cdot f'(x)$$

← נכנס

$$2f(x) \cdot f'(x) = 0$$

↙
 כל
 אפס
 ↘
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• סיכוי ג-ה יהיו אלו הנכנס.

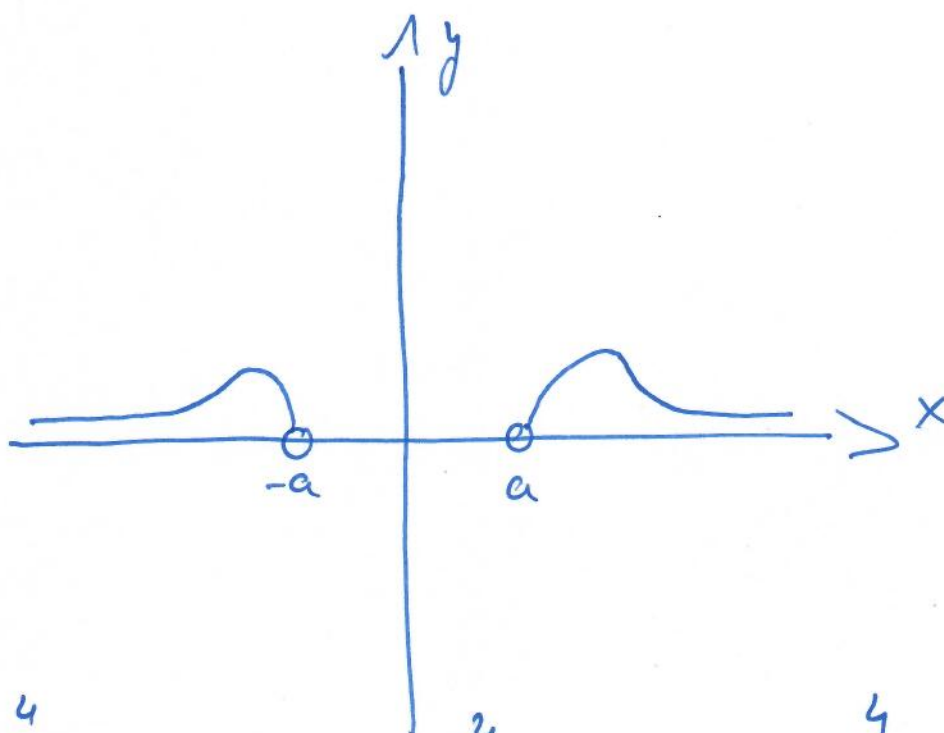
X	$-2a$	$-a\sqrt{2}$	$-1.2a$	a	a	$1.2a$	$a\sqrt{2}$	$2a$
$(f(x)^2)'$	-	0	+	/	/	-	0	+
$f(x)^2$	↘	m n	↗	/	/	↘	m n	↗

$$\min(-a\sqrt{2}, 4a^2)$$

③

$$\min(a\sqrt{2}, 4a^2)$$

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



$$\textcircled{1} \int_3^4 \frac{x^2-4}{x^4} dx = \int_3^4 \frac{1}{x^2} - \frac{4}{x^4} dx = \int_3^4 x^{-2} - 4x^{-4} dx$$

$$\int_3^4 -\frac{1}{x} + \frac{4}{3}x^{-3}$$

$$x=4$$

$$x=3$$

$$\left[-\frac{1}{4} + 0.0208 \right] - \left[-\frac{1}{3} + 0.04938 \right] = \boxed{0.054}$$

2'11