

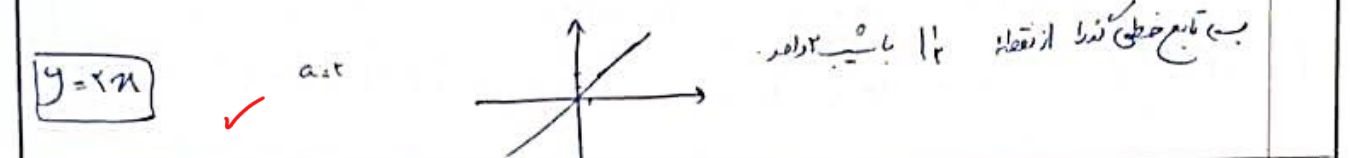
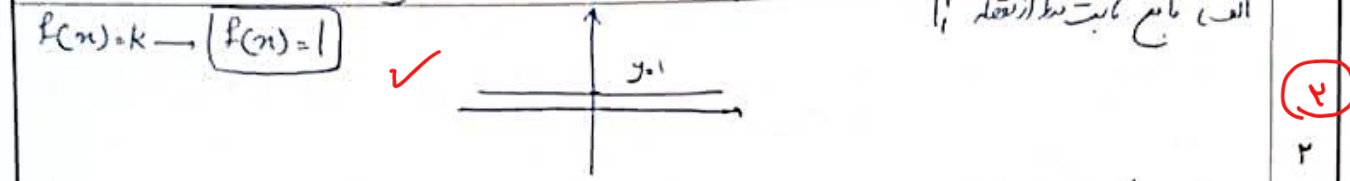
نام و نام خانوادگی (پیش از این شماره گذاری) پاسخنامه تشریحی تکلیف شماره ۲ کلاس C {

تابع است $y = \sqrt[3]{x}$ $y^3 = x$ $x=1 \rightarrow y=1$ $x=8 \rightarrow y=2$ $x=27 \rightarrow y=3$ $x=64 \rightarrow y=4$ $x=125 \rightarrow y=5$ $x=216 \rightarrow y=6$ $x=343 \rightarrow y=7$ $x=512 \rightarrow y=8$ $x=729 \rightarrow y=9$ $x=1000 \rightarrow y=10$ $x=1331 \rightarrow y=11$ $x=1728 \rightarrow y=12$ $x=2197 \rightarrow y=13$ $x=2800 \rightarrow y=14$ $x=3593 \rightarrow y=15$ $x=4500 \rightarrow y=16$ $x=5543 \rightarrow y=17$ $x=6750 \rightarrow y=18$ $x=8127 \rightarrow y=19$ $x=9700 \rightarrow y=20$ $x=11493 \rightarrow y=21$ $x=13528 \rightarrow y=22$ $x=15827 \rightarrow y=23$ $x=18413 \rightarrow y=24$ $x=21310 \rightarrow y=25$ $x=24543 \rightarrow y=26$ $x=28127 \rightarrow y=27$ $x=32080 \rightarrow y=28$ $x=36427 \rightarrow y=29$ $x=41183 \rightarrow y=30$ $x=46363 \rightarrow y=31$ $x=51983 \rightarrow y=32$ $x=58060 \rightarrow y=33$ $x=64610 \rightarrow y=34$ $x=71650 \rightarrow y=35$ $x=79193 \rightarrow y=36$ $x=87253 \rightarrow y=37$ $x=95843 \rightarrow y=38$ $x=104977 \rightarrow y=39$ $x=114668 \rightarrow y=40$ $x=124928 \rightarrow y=41$ $x=135770 \rightarrow y=42$ $x=147217 \rightarrow y=43$ $x=159281 \rightarrow y=44$ $x=171974 \rightarrow y=45$ $x=185308 \rightarrow y=46$ $x=199305 \rightarrow y=47$ $x=213977 \rightarrow y=48$ $x=229336 \rightarrow y=49$ $x=245403 \rightarrow y=50$ $x=262199 \rightarrow y=51$ $x=279736 \rightarrow y=52$ $x=298035 \rightarrow y=53$ $x=317118 \rightarrow y=54$ $x=336997 \rightarrow y=55$ $x=357693 \rightarrow y=56$ $x=379228 \rightarrow y=57$ $x=401623 \rightarrow y=58$ $x=424899 \rightarrow y=59$ $x=449077 \rightarrow y=60$ $x=474178 \rightarrow y=61$ $x=500213 \rightarrow y=62$ $x=527203 \rightarrow y=63$ $x=555168 \rightarrow y=64$ $x=584128 \rightarrow y=65$ $x=614103 \rightarrow y=66$ $x=645113 \rightarrow y=67$ $x=677178 \rightarrow y=68$ $x=710318 \rightarrow y=69$ $x=744553 \rightarrow y=70$ $x=780003 \rightarrow y=71$ $x=816688 \rightarrow y=72$ $x=854628 \rightarrow y=73$ $x=893853 \rightarrow y=74$ $x=934383 \rightarrow y=75$ $x=976238 \rightarrow y=76$ $x=1019438 \rightarrow y=77$ $x=1063993 \rightarrow y=78$ $x=1109923 \rightarrow y=79$ $x=1157248 \rightarrow y=80$ $x=1205988 \rightarrow y=81$ $x=1256163 \rightarrow y=82$ $x=1307793 \rightarrow y=83$ $x=1360908 \rightarrow y=84$ $x=1415528 \rightarrow y=85$ $x=1471683 \rightarrow y=86$ $x=1529393 \rightarrow y=87$ $x=1588678 \rightarrow y=88$ $x=1649558 \rightarrow y=89$ $x=1712053 \rightarrow y=90$ $x=1776183 \rightarrow y=91$ $x=1841968 \rightarrow y=92$ $x=1909428 \rightarrow y=93$ $x=1978583 \rightarrow y=94$ $x=2049453 \rightarrow y=95$ $x=2122058 \rightarrow y=96$ $x=2196418 \rightarrow y=97$ $x=2272563 \rightarrow y=98$ $x=2350523 \rightarrow y=99$ $x=2430318 \rightarrow y=100$

تابع نیست $|y| + x^2 = x, x \rightarrow 0 \rightarrow |y| = 2$ $y = \pm 2$

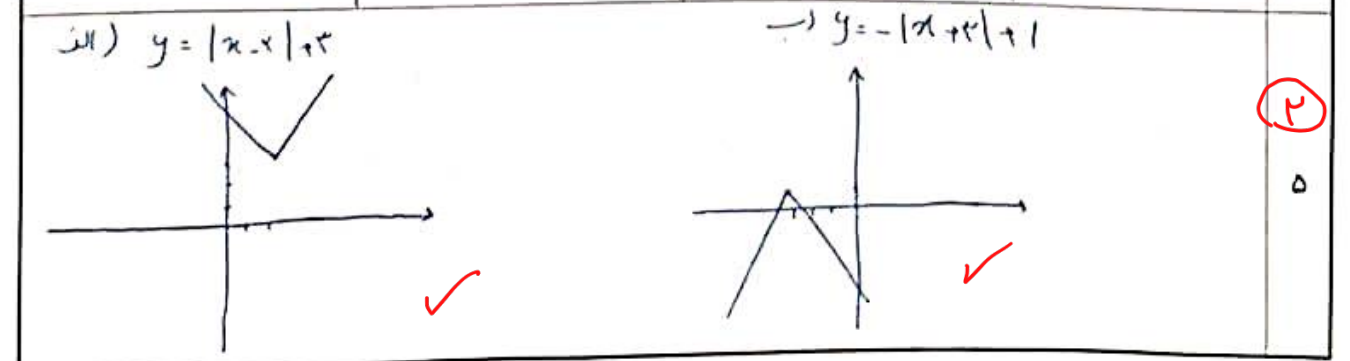
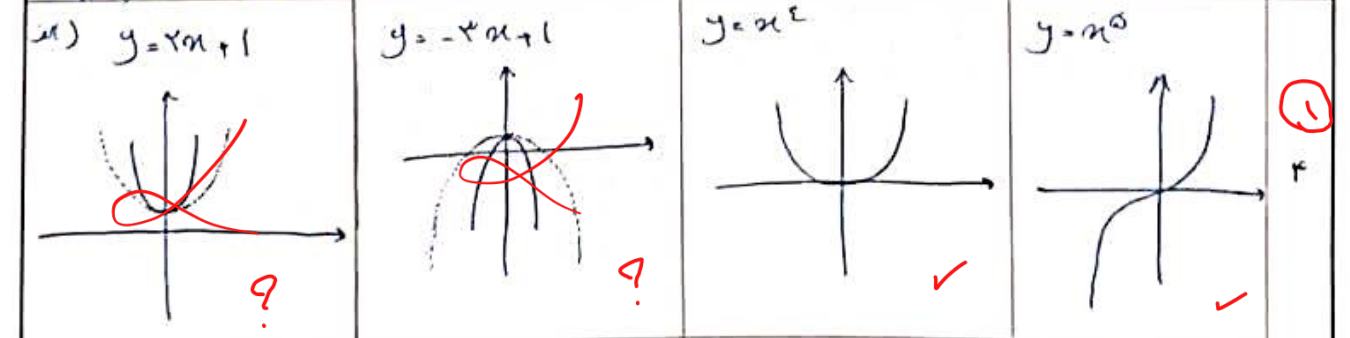
تابع است $\sqrt{x+4} + |y-2| = 0$ $x = -4$ $y = 2$

تابع نیست $x = \cos y \rightarrow \cos y = 0 \rightarrow y = \frac{\pi}{2}, \frac{3\pi}{2}$



الف) $f(x) = x \rightarrow ax + b = x \rightarrow a = 1, b = 0$ $a + 2b = 1, f(0) = 1$

الف) $f(x) = y$ $f(x) = 1$ $y = (x)^2 + a(x) + b \rightarrow 2a + b = -3$ $1 = (x)^2 + (-2x) + b \rightarrow b = 5$ $a + 2b = 7$



$$1) y = \frac{x+1}{x^2-1} \quad x^2-1 \neq 0 \quad x(x-1) \neq 0 \quad D_f = \mathbb{R} - \{0, 1\}$$

$$2) y = \frac{x+1}{x^2-\sqrt{x+1}} \quad x^2-\sqrt{x+1} \neq 0 \quad \Delta < 0 \quad D_f = \mathbb{R}$$

$$3) y = \frac{x+1}{x^2+x+1} \quad x^2+x+1 \neq 0 \quad \Delta < 0 \quad D_f = \mathbb{R}$$

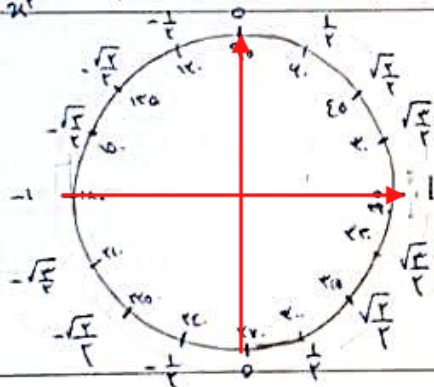
$$4) y = \frac{x+1}{x^2-1} \quad x^2-1 \neq 0 \quad (x^2+1)(x^2-1) \rightarrow x^2(x+1)(x-1) \quad D_f = \mathbb{R} - \{0, 1, -1\}$$

$$5) y = \sqrt{4-x} + \sqrt{x-1} \quad 4-x \geq 0 \quad x \leq 4 \quad 1 \leq x \leq 4 \quad D_f = [1, 4]$$

$$6) y = \frac{x+1}{x^2+1} \quad x^2+1 \neq 0 \quad x^2 \neq -1 \quad D_f = \mathbb{R}$$

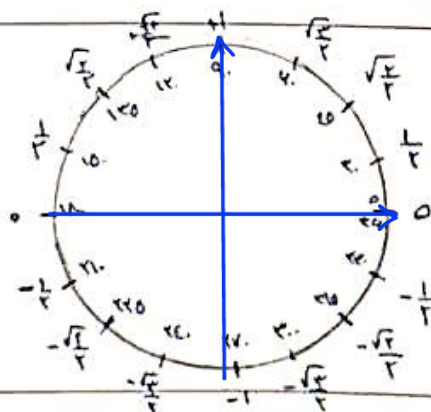
$$7) y = \frac{\sqrt{x-1}}{x-1} \quad x-1 \geq 0 \quad x \geq 1 \quad x \neq 1 \quad D_f = [1, \infty) \cup (1, \infty)$$

$$8) y = \frac{x^2+x}{|x|+x^2} \quad |x|+x^2 \neq 0 \quad |x| \neq x^2 \rightarrow x \neq 0 \quad D_f = \mathbb{R} - \{0\}$$



Cos

Sin



$$9) -\cos \frac{\pi}{4} \rightarrow -\cos 45^\circ \rightarrow -\left(-\frac{1}{\sqrt{2}}\right) = \frac{1}{\sqrt{2}} \quad \sin \theta = \frac{1}{\sqrt{2}} \quad \theta = 45^\circ, 135^\circ \rightarrow \frac{\pi}{4}, \frac{3\pi}{4}$$

$$10) -\cos \frac{11\pi}{4} \rightarrow -\cos 315^\circ \rightarrow -\frac{\sqrt{2}}{2} \quad \sin \theta = \frac{\sqrt{2}}{2} \rightarrow 45^\circ, 135^\circ \rightarrow \frac{\pi}{4}, \frac{3\pi}{4}$$

١-

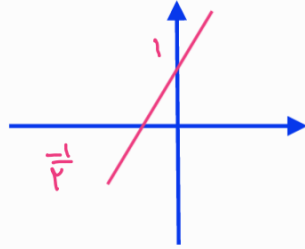
الف $y^3 - x = 2x^2$

تابع است. $y_1^3 = x + 2x^2$
 $y_2^3 = x + 2x^2 \rightarrow y_1^3 = y_2^3 \Rightarrow \underline{y_1 = y_2}$
 تعريف رياضي $\left. \begin{matrix} y_1^3 = x_1 + 2x_1^2 \\ y_2^3 = x_2 + 2x_2^2 \end{matrix} \right\} \xrightarrow{x_1 = x_2}$

برای اثبات تابع بودن باید مثال نقض نزنیم.

٢-

الف $y = 2x + 1$



ب $y = -3x + 1$

