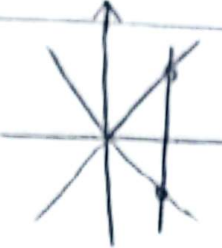


$f = \{(1, 2a), (1, a^2 + 3), (2, 3a)\} \xrightarrow{\text{نقطة}} f_a = a^2 + 3, \text{ و } a^2 - f_a = -3$ (1)

$a(a-3) = -3 \Rightarrow \boxed{a = 1, 3}$ ✓ (2)

$\begin{cases} 1 & x = -3 \\ 1 & x = 1 \\ 1 & x = 1 \end{cases}$

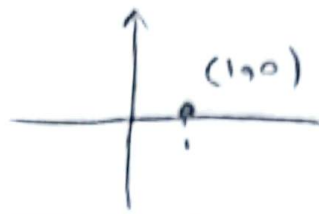
✓ $|y| = |x| \Rightarrow y = |x|$
 $y = -|x|$ (2)



مع
 (3) $x = 1, y = 1$

✓ $|y| + \sqrt{x-1} = 0 \Rightarrow x=1, y=0$ (2)

$|y| = 0 \Rightarrow y = 0 / \sqrt{x-1} = 0 \Rightarrow x = 1$



✓ $|y-1| = \sqrt{x-2} \xrightarrow{x=y} |y-1| = \sqrt{y-2} \Rightarrow |y-1| = 2$ (2)

$y-1 = 2 \Rightarrow y = 3$
 $y-1 = -2 \Rightarrow y = -1$ (2)

ع.ل. X

✓ $y^a - y = \frac{x^r}{r} \xrightarrow{x=0} y^a - y = 0 \Rightarrow y(y^{a-1} - 1) = 0$ (2)

0, 1, -1

ع.ل. X

✓ $\sin^r x + \cos^r \frac{y}{r} = 1 \Rightarrow 0 + \cos^r \frac{y}{r} = 1$
 $\frac{y}{r} = 0, 180^\circ \Rightarrow y = 0, 180^\circ$

✓ $rxy = n \xrightarrow{n=0} rxy = 0$ (2)

$x, y, r, n, \dots$

X ع.ل.

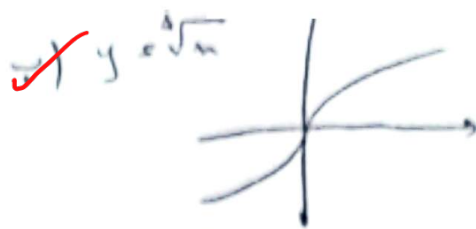
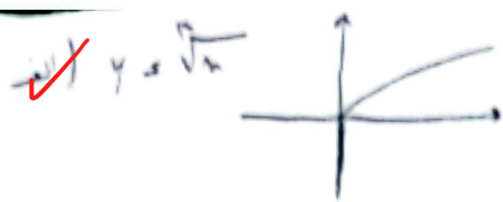
✓ $x^r + |y-1| = r_n \xrightarrow{n=1} 1 + |y-1| = r \Rightarrow |y-1| = r-1$ (2)

$y = r$
 $y = -r$

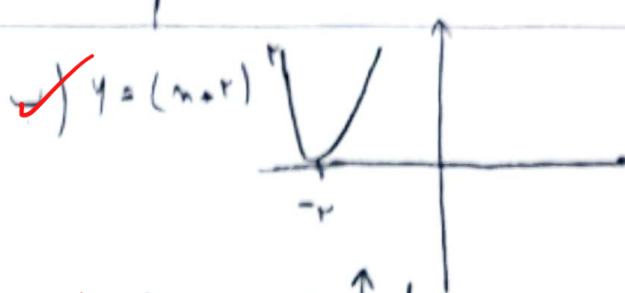
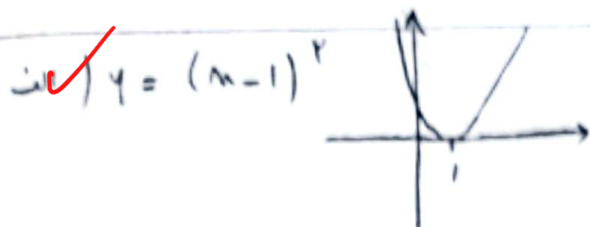
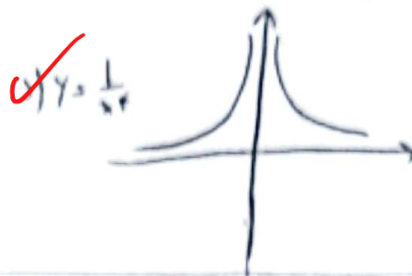
✓ $y^a + r_n = 0 \Rightarrow y_1^a + r_{n_1} = y_r^a + r_{n_r} \xrightarrow{n_1=r_n} y_1^a = y_r^a$ (2)

$(y_1, n_1) \in f \xrightarrow{\text{if } n_1=r_n} y_r = y_1$
 $(y_r, n_r) \in f$

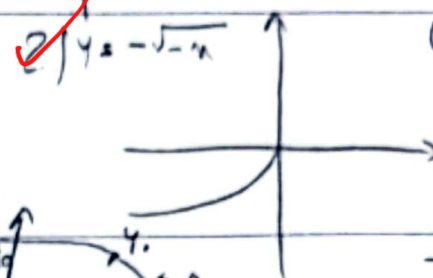
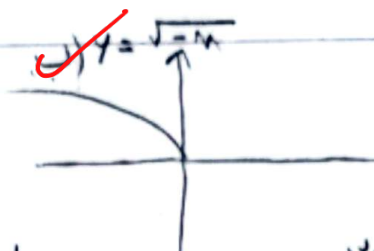
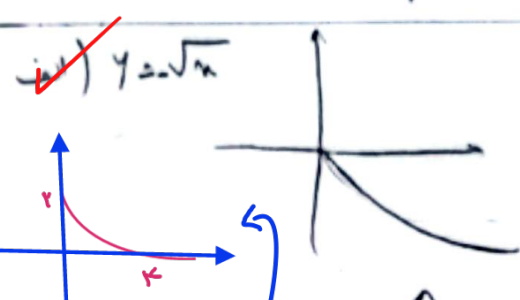
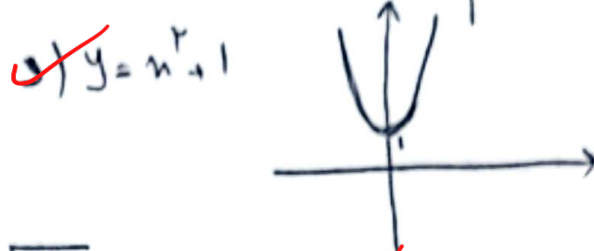
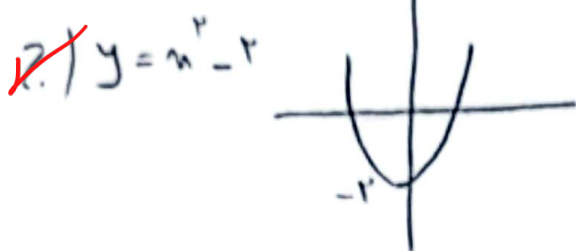
$\sqrt[n]{y_1^a} = \sqrt[n]{y_r^a} \Rightarrow y_1 = y_r$ ع.ل.



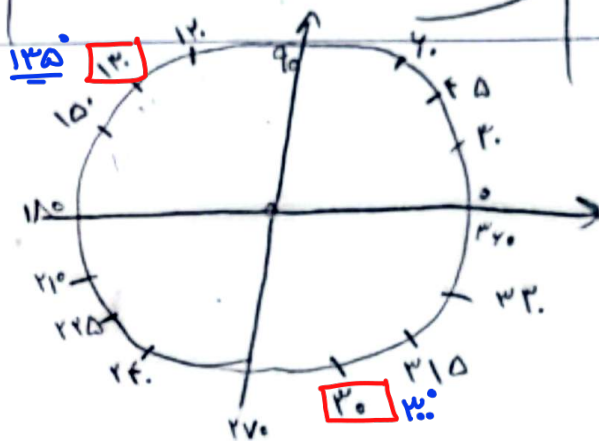
(2)



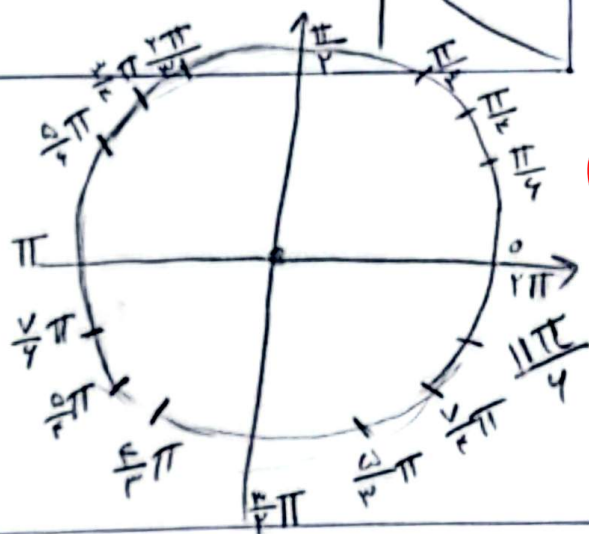
(2)



(2)



(1.8)



(2)

الف) $\cos 120^\circ = -\frac{1}{2}$ ✓

ب) $\sin 120^\circ = \frac{\sqrt{3}}{2}$ ✓

ج) $\cos \frac{5\pi}{6} = -\frac{\sqrt{3}}{2}$ ✓

د) $\sin \frac{11\pi}{6} = -\frac{1}{2}$ ✓

(6)

(2)