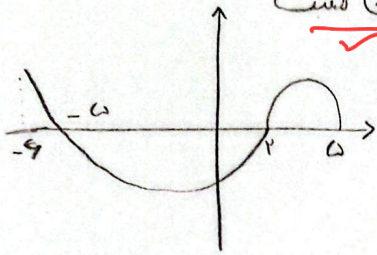


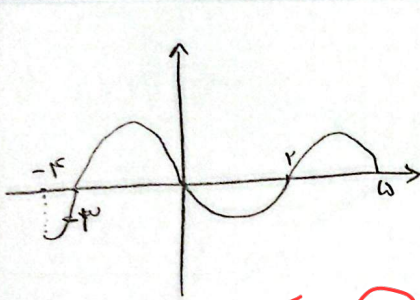
مطابق رتبه

$n f(n) > 0$ ناحیه یک و سه ضربشون مثبت



$$D_f = [-4, 0] \cup [2, 4]$$

2 ✓



$$y = \sqrt{\frac{-n}{f(n)}}$$

$$\frac{-n}{f(n)} > 0$$

$$\frac{n}{f(n)} < 0$$

$$D_f = (-4, 0) \cup (0, 2)$$

$$\frac{-4, -1, 1, 4}{-2, -1, 1, 4}$$

منفی
ناقص در 2 و 4

$$f(n) \neq 0$$

$$n \neq 0, 2, 4, -4$$

2 ✓

$$f(n) - 2f(2) = n^2 - 3n + 4$$

$$f(-2) + 4 = 4 + 9 + 4$$

$$f(2) - 2f(2) = 4 - 9 + 4$$

$$f(-2) = 10$$

$$-f(2) = 2$$

$$f(2) = -2$$

2 ✓

$$f(f(4)) + f(f(1)) = f(2) + f(4) = 9$$

$$4 - \sqrt{9} = 2$$

$$2 + 3 = 5$$

$$5$$

$$4 - 3 = 1$$

2 ✓

$$f(n-1) - f(n) = 9n + 2$$

$$f(n-1) = a(n-1)^2 - b(n-1) + 2 = an^2 - 2na + a - bn + b + 2$$

$$an^2 - 2na + a - bn + b + 2 - (an^2 - bn - 2) = 9n + 2$$

$$-2na + a + b - 2 = 9n \xrightarrow{n=1} -2a + a + b - 2 = 9$$

$$-a + b = 11$$

$$a - b = -11$$

2 ✓

5

$$f(n) = n^r - rn + 1$$

$$9 - 9 + 1 = 1 \quad \underbrace{1 + r + 1 = 0}_{r = -2}$$

$$\frac{r f(r) + f(-1)}{f(r)} = \frac{r + 0}{1} = r$$

$$r = 9 + 1 = -1$$

② ✓

$$r+1 = 10$$

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

$$\underbrace{r+1 = 10}$$

② ✓

$$\frac{f(f(r)) - f(f(r))}{f(1) - r} = \frac{0}{r} = 0$$

$$\underbrace{f(1) = r}$$

② ✓

$$\frac{r + r - \cancel{r} + \cancel{r} - 1 + 9}{r + r - \cancel{r} + \cancel{r} - 1 + 0} = \frac{9}{r} = r$$

$$\frac{r + 1 + 9}{r + 1 + 0} = \frac{r+1}{r}$$

② ✓

$$f(\sqrt{n}) = n + \frac{1}{n}$$

$$(f(\sqrt{n}))^r = n^r + \frac{1}{n^r} + r$$

② ✓

$$(f(\sqrt{n}))^r - f(n) = n^r + \frac{1}{n^r} + r - n^r - \frac{1}{n^r} = r$$