

نام آزمون: ریاضی ۱۲ تجربی

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پژوهندگان علم

۱- اگر f روی $\mathbb{R}$ اکیداً نزولی باشد، دامنه تابع g را بیابید.

$$g(x) = \sqrt{f(|2x-1|) - f(|x+1|)}$$

۲- با فرض $f(x) = \frac{2x-1}{x+2}$ و $g = \{(3, -1), (0, 2), (4, 1), (1, -2)\}$ ، دامنه، برد و اعضای تابع ترکیب $f \circ g$ را مشخص کنید.

۳- برای توابع $f = \{(4, -1), (3, 1), (5, 2)\}$ و $g = \{(-1, 2), (4, 0), (5, 3)\}$ ، تابع‌های ترکیب $g \circ f^{-1}$ و $f \circ g^{-1}$ را به دست آورید.

۴- اگر تابع f روی $\mathbb{R}$ اکیداً نزولی و $f(-2) = 0$ باشد، دامنه تابع زیر را بیابید.

$$g(x) = \sqrt{(x^2 - 81)f(x)}$$

۵- اگر f روی $\mathbb{R}$ اکیداً صعودی و $f(1) = 0$ باشد، دامنه تابع زیر را بیابید.

$$g(x) = \sqrt{(x^2 - 3x)f(x)}$$

۶- اگر f روی $\mathbb{R}$ تابعی اکیداً صعودی باشد، دامنه تابع g را بیابید.

$$g(x) = \sqrt{f(|x-2|) - f(|x+1|)}$$

۷- صعودی و نزولی بودن تابع زیر را بررسی کنید.

$$f(x) = [-2x] + 1$$

۸- موارد خواسته شده را در صورت امکان به دست آورید.

الف

$$f(x) = \sqrt{2x-3} \quad ; \quad g(x) = \frac{6}{3x-5} \quad : D_{f \circ g}, (f \circ g)(x)$$

ب

$$f(x) = \sqrt{x+2} \quad ; \quad g(x) = \sqrt{x^2-16} \quad : D_{g \circ f}, (g \circ f)(x)$$

۹- باتوجه به ماشین $x \rightarrow \boxed{f} \rightarrow \boxed{g} \rightarrow x$ اگر $f(x) = \frac{5x+6}{2x-1}$ و تابع g معکوس‌پذیر باشد و داشته باشیم $g(a) = 3$ ، مقدار a را به دست آورید.

۱۰- اگر $f(x) = \frac{2}{x-1}$ و $g(x) = \frac{3}{x}$ ، دامنه و ضابطه توابع $f \circ g$ و $g \circ f$ را به دست آورید.

1 - Find the mistakes and correct them.

1. How many languages are speaking in India?
2. All the coffee have drunk by my little son.
3. A: Is the car using at the moment? B: Yes, Mehran is using it.
4. There was a fire in the house last month. Three of the rooms destroyed.
5. John has been lost his money. He can't buy the flower.

2 - Complete each sentences with your own.

الف My grandfather can not hear anything. He is really of hearing.

ب He really needs to control his pressure.

پ It was shocking news and she into tears, suddenly.



ت

Dr.Gharib is really a generous man. He no pains to cure sick children.

3 - B: Fill in the blanks with the given words. There is one extra word.

inform – grateful – strength - generation – boost - burst

1. People retiring today are wealthier than the previous
2. The theatre managed to its audiences by cutting ticket prices.
3. We will you in writing, if your application has been successful.
4. He was driving along the motorway when his tyre
5. If you could get that report finished by Thursday, I'd be very

4 - C: Make collocations by matching the words on the left with ones on the right column.

A	B
1. start	a. research
2. make	b. a family
3. do	c. time
4. have	d. a rest
5) take	e. friends
6) spare	f. a heart attack

5 - Read the sentences and decide whether the question tags are in the correct form.

- We had a great day out at the amusement park, didn't we?
a. Correct b. Wrong
- You don't know if Freddy speaks German, does he?
a. Correct b. Wrong
- You shouldn't tell other people what to do, should they?
a. Correct b. Wrong
- You haven't done much revision for your exams, have you?
a. Correct b. Wrong
- You will let me know what they said to him, won't they?
a. Correct b. Wrong

