**КЛЮЧИ:**

Вариант 1

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| **№1**   1. *f `(x) = 3x2 ,* 2. *f `(x) = -2cos x ,* 3. *f `(x) = -35x6 ,* 4. *f `(x) = 2 ,* 5. *f `(x) = - ,* 6. *f `(x) = -7x-8 .* | **№2**   1. *f `(x) = 3x2 + 2x ,* 2. *f `(x) = 15x2 + 2x ,* 3. *f `(x) = - 4sin x - 6x ,* 4. *f `(x) = 3x2 + 4x - ,* 5. *f `(x) = 12x5 -* |

**№3**

1. *f `(x) = (5х-1)`(4x+1) + (5x -1)(4x + 1)`= 5(4x+1) + 4(5x -1) =*

*= 20x + 5 +20x -4 = 40x + 1*

1. *f `(x) = (х2)`(3x + x3) + х2( 3x + x3)`= 2x(3x + x3) + х2 (3 +3 x2)=*

*= 6x2 + 2x4 + 3x2 + 3x4 = 9x2 + 5x4*

1. *f `(x) = ()`(x2+1) + (x2+1)`= (x2+1) + •2x = + 2x=*

*=*

**№ 4**

1. *f `(x) = = =*

*= =*

1. *f `(x) = = =*

=  *=*

**№5**

|  |  |
| --- | --- |
| *f `(x) = 3x2 + 8x – 3*  *f `(x) = 0, если 3x2 + 8x – 3 = 0*  *D = 82 - 4•3•(-3) = 64+36 =100*  *x = ;*  *x1 = -3, x2 = .*  *Ответ: -3; ,* | *f `(x) =2х – 3*  *f `(x) > 0, если 2х – 3> 0,*  *2х > 3,*  *х >1,5.*  *Ответ: (1,5; +∞)* |

Вариант 2

|  |  |
| --- | --- |
| **№1**   1. *f `(x) = 4x3 ,* 2. *f `= - 3sin x ,* 3. *f `(x) = - 18x5 ,* 4. *f `(x) = -5 ,* 5. *f `(x) = - ,* 6. *f `(x) = -6x-7* | **№2**   1. *f `(x) = 2x - 4x3* 2. *f `(x) = 12x3 + 3x2* 3. *f `(x) = 2cos x + 15x2* 4. *f `(x) = 4x3 + 4 -* 5. *f `(x) = 9x2 -* |

**№3**

1. *f `(x) = (3х +2)`(4x - 1) + (3x + 2)(4x - 1)`= 3(4x - 1) + 4(3x + 2) =*

*= 12x – 3 +12x + 8 = 24x + 5*

1. *f `(x) = (2х)`(1 - x3) + 2x(1 - x3)`= 2(1 - x3) + 2x (-3 x2)= 2 – 2x3 – 6x3 =*

*= 2 – 8x3*

1. *f `(x) = ()`(+ 3) + (+ 3)`= (+3) + • =*

*= + + = + 1*

**№ 4**

1. *f `(x) = = =*

*= =*

1. *f `(x) = = =*

=  *=*

**№5**

|  |  |
| --- | --- |
| *f `(x) = 6x2 - 18x + 12*  *f `(x) = 0, если 6x2 - 18x + 12= 0,*  *x2 - 3x + 2= 0.*  *D = 32 - 4•1•2 = 9 - 8 =1*  *x = ;*  *x1 = 1, x2 = .*  *Ответ: 1; 2.* | *f `(x) =2х +3*  *f `(x) > 0, если 2х +3> 0,*  *2х > -3,*  *х >-1,5.*  *Ответ: (- 1,5; +∞)* |