**Практическое занятие**

**Варианты практической работы**

**Вариант 1**

1. Постройте графики функций: у=х2; у=х2-3; у=(х+2)2.
2. Выясните, является ли функция у=х5-х3 чётной, нечётной или другой.
3. Вычислите: f(-2), если f(x)=x3+5.

**Вариант 2**

1. Постройте графики функций: у=х2; у=х2+3; у=(х-2)2.
2. Выясните, является ли функция у=х6-х4 чётной, нечётной или другой.
3. Вычислите: f(-2), если f(x)=x3-5.

**Вариант 3**

1. Постройте графики функций: у=х2; у=х2-1; у=(х+3)2.
2. Выясните, является ли функция у=х4-х3 чётной, нечётной или другой.
3. Вычислите: f(-12), если f(x)=x2-9.

**Вариант 4**

1. Постройте графики функций: у=х2; у=х2 -2; у=(х-3)2.
2. Выясните, является ли функция у=х2-х3 чётной, нечётной или другой.
3. Вычислите: f(-2), если f(x)=x3-18.

**Вариант 5**

1. Найдите область определения функции у = lg Описание: http://sdamzavas.net/imgbaza/baza1/1911394062.files/image318.png.
2. Укажите множество значений функции y = sin3x + 5.
3. Постройте графики функций: у=х3, у=log2 x, у=cos3x.

**Вариант 6**

1. Найдите область определения функции у = lg Описание: http://sdamzavas.net/imgbaza/baza1/1911394062.files/image322.png.
2. Укажите множество значений функции y = cos 5x + 1.
3. Постройте графики функций: у=х4, у= log0,5 x , у=sinx.

**Вариант 7**

1. Найдите область определения функции у = lg Описание: http://sdamzavas.net/imgbaza/baza1/1911394062.files/image326.png.
2. Укажите множество значений функции y = sin3x -2.
3. Постройте графики функций: у=x5, у= , у= -3cosx.

**Вариант 8**

1. Найдите область определения функции у = lg Описание: http://sdamzavas.net/imgbaza/baza1/1911394062.files/image330.png.
2. Укажите множество значений функции y = sin4x -1.
3. Постройте графики функций: у=x6, у=, у= cos2х.

**Задания для практической работы**

**Задание 1** Найдите область определения функции:



**Задание 2** Установите четность или нечетность функции:



**Задание 3** Определите, какая графическая модель, соответствует каждой из данных функций. Буквы, обозначающие графики, запишите рядом с формулами.

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| Б   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | y |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | -2 |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  | 0 |  |  |  | x |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | -3 |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | | Е  y   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | 2 |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | 0 |  |  |  |  | x |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |
| Д   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | y |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | 0 |  |  |  |  | x |  | |  |  |  |  |  |  |  |  |  |  |  |  | | М   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | y |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | 0 |  |  |  |  | x |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | -2 |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |
| Ц   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  | y |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | 2 |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | -3 |  |  | 0 |  |  |  |  | x |  | | О   |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  | y |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  | 0 |  |  | 2 |  | x |  | |  |  |  |  |  |  |  |  |  |  |  |  | |
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| --- | --- | --- | --- | --- | --- | --- |
| y = x2 - 2 | y = (x-2)2 | y = (x+2)2-3 | y = -(x-2)2+3 | y = x2 | y = - x2+2 | y = (x+3)2+2 |
|  |  |  |  |  |  |  |

**Контрольные вопросы**

1. Дайте определение функции. Приведите примеры пар переменных величин, связанных между собой некоторой функциональной зависимостью.
2. Перечислите способы задания функции.
3. Дайте определение графика функции.
4. Перечислите основные типы преобразования графиков функций.
5. Дайте определение функции непрерывной на отрезке и непрерывной в точке.
6. Дайте определение: а) возрастающей; б) убывающей; в) строго монотонной; г) невозрастающей; д) неубывающей; е) монотонной; ж) ограниченной снизу; з) ограниченной сверху; и) ограниченной; к) чётной; л) нечётной; м) периодической; н) сложной; о) обратной функций.
7. Дайте определение степенной функции. Приведите примеры.
8. Дайте определение показательной функции. Приведите примеры.
9. Дайте определение логарифмической функции. Приведите примеры.
10. Сформулируйте свойства: а) степенной; б) показательной; в) логарифмической функции.
11. Какие функции называются тригонометрическими?
12. Дайте определение: а) синуса; б) косинуса; в) тангенса; г) котангенса любого угла.
13. Какие тригонометрические функции являются: а) четными; б) нечётными?
14. Какие наименьшие положительные периоды имеют функции: а) sinx; б) cosx; в) tgx; г) ctgx?
15. Какова область определение функции: а) sinx; б) cosx; в) tgx; г) ctgx?
16. Какова область значения функции: а) sinx; б) cosx; в) tgx; г) ctgx?