**Специализированное структурное образовательное подразделение Посольства России в Египте средняя общеобразовательная школа с углубленным изучением иностранного языка**

 **Тест по алгебре 10 класс 2 полугодие.**

Фамилия \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Имя\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Город\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Дата\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 **Сайт**

**Часть 1. Обведите кружком верный ответ.(За каждое верно выполненное задание – 1 балл).**

1. **Вычислите значение производной функции** $f\left(x\right)=x^{2}-3x$ **в точке *x = 2.***
2. -1 2) 1 **3)** 0 **4)** -3 **5)** другой ответ
3. **Найдите производную функции** $f\left(x\right)=\frac{x^{3}-3x}{1+4x^{5}}$
4. $\frac{3x^{2}-3}{1+4x^{5}}$ 2) $\frac{x^{3}-3x}{(1+4x^{5})^{2}}$ 3) $\frac{-8x^{7}+48x^{5}+3x^{2}-3}{(1+4x^{5})^{2}}$ 4) $\frac{60x^{7}-60x^{4}}{(1+4x^{5})^{2}}$ 5) другой ответ
5. **Найдите промежутки возрастания функции** $f\left(x\right)=4x^{2}-5$
6. $∅$ 2) $(-\infty ; +\infty )$ 3) $(-\infty ; 0)$ 4) $( 0; +\infty )$ 5) другой ответ
7. **Найдите производную функции** $f\left(x\right)=(x^{3}-2x^{2}+3)^{17}$

$1) (x^{3}-2x^{2}+3)^{16} 2)17(x^{3}-2x^{2}+3)^{16} 3) 0 $ $4) 17x(3x-4)(x^{3}-2x^{2}+3)^{16}$ 5) другой ответ

**Часть 2. Выполните задание и запишите решение. (За каждое верно выполненное задание – 2 балла).**

1. **Напишите уравнение касательной к графику функции** $f\left(x\right)=3\sin(x)$ **в точкек с абсциссой** $x\_{0}=π$

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1. **Материальная точка движется прямолинейно по закону** $x\left(t\right)=t^{3}-4t^{2}.$ **Найдите скорость и ускорение в момент t=5 с. (Перемещение измеряется в метрах)**

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**Часть 3. Напишите подробное решение заданий. ( За каждое верно выполненное задание – 3 балла).**

1. **Исследуйте функцию и постройте её график** $f\left(x\right)=\frac{1}{2}x^{2}-\frac{1}{5}x^{5}$**.**

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**Критерии оценки:**

**“5”- 10- 11 баллов;**

“**4” – 8 - 9 баллов;**

“**3” – 5-7 баллов.**

**Менее 5 баллов – неудовлетворительно.**

**Ответы к тесту по алгебре.**

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| **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **2** | **3** | **4** | **4** | $$y=-3x+3π$$ | 35$\frac{м}{с} $$$и 22 \frac{м}{с^{2}}$$ |  |