**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**IB Mathematics SL Year 2**

**21/22AD**

**TAKE HOME SSA**

**DUE WEDNESDAY DECEMBER 5th**

**Non-Calculator Section**

**32 Minutes**

**32 Points**

**1.** If *f* (*x*) = cos *x*, and *f*  = – 2, find *f* (*x*).

|  |  |
| --- | --- |
| *Working:* |  |
|  | *Answer:*  ...................................................................... |

(Total 4 marks)

**2.** a.) Let *f* (*x*) = 1 – *x*2. Given that *f* (3) = 0, find *f* (*x*).

**b.**) Find the definite integral  using the fundamental theorem of calculus (lighting strike!).

|  |  |
| --- | --- |
| *Working:* |  |
|  | *Answer:*   1. .............................................................. 2. .............................................................. |

(Total 4 marks)

**3.** The derivative of the function *f* is given by *f* (*x*) =  – 0.5 sin *x,* for *x*  –1.

The graph of *f* passes through the point (0, 2). Find an expression for *f* (*x*).

|  |  |
| --- | --- |
| *Working:* |  |
|  | *Answer*:  ...................................................................... |

(Total 6 marks)

**4.** The function *f* is given by *f* (*x*) = 2sin (5*x* – 3).

(a) Find *f "* (*x*).

(b) Write down .

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(Total 6 marks)

**5.** It is given that = *x*3+2*x* – 1 and that *y* = 13 when *x* = 2.

Find *y* in terms of *x*.

|  |  |
| --- | --- |
| *Working:* |  |
|  | *Answer*:  .................................................................. |

(Total 6 marks)

**6.** Let *f* (*x*) = (3*x* + 4)5. Find

(a)*f* (*x*);

(b) 

|  |  |
| --- | --- |
| *Working:* |  |
|  | *Answers*:  (a) ..................................................................  (b) .................................................................. |

(Total 6 marks)