CIS 2107. Quiz 2a.

The quiz is 2 pages and is out of 20 points.

1. 1 point Write the single line of code that declares a pointer to an int.

2. 1 point Suppose that I have a pointer variable p. Write the single line of code that sets p to point to an integer variable named x.

3. Suppose that we run the following code on a big-endian machine:

```c
int main(int argc, char **argv) {
    int x=0x01234567, y=0xABCDEF91;
    int *ip, *iq;
    char *cp;

    ip=&x;
    iq=ip;
    cp=(char*)ip;
    ip++;
    (*cp)++;
    (*iq)++;
}
```

with memory laid out like:

<table>
<thead>
<tr>
<th>address</th>
<th>value</th>
<th>var</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>500</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>504</td>
<td>y</td>
<td></td>
</tr>
<tr>
<td>508</td>
<td>ip</td>
<td></td>
</tr>
<tr>
<td>512</td>
<td>iq</td>
<td></td>
</tr>
<tr>
<td>516</td>
<td>cp</td>
<td></td>
</tr>
<tr>
<td>...</td>
<td>...</td>
<td></td>
</tr>
</tbody>
</table>

`sizeof(int)` and `sizeof(int*)` are both 4 bytes. If it can be determined, what is the value of each the following? If it cannot be determined, write, can’t tell. It the expression would result in a compiler error, write, compiler error.

(a) 1 point x

(b) 1 point &x

(a) ____________

(b) ____________
4. 10 points. Write a function that is passed an int x. The method returns 1 if x is evenly divisible by 4 and 0 if it isn’t. Do not use the % operator. No credit for solutions that use the % operator.