First do the following Wiley-Plus assignment: Assignment #28b

After completing the Wiley-Plus, in your homework notebook, complete the following problems:

CH28 Questions # 7, 9, and 10.
CH28 Problems # 40, 50, and 56

To check your work, the answers to the odd problems are in the back of the book.

The answers to the even problems are:

#40) \( |\vec{F}| = 20.1N \)

#50) \( \tau_{\text{max}} = 6.58 \times 10^{-26} N \cdot m \)

#56) a) \( \mu = 0.184 A \cdot m^2 \)

b) \( |\tau| = 1.45 N \cdot m \)

---

**Homework**

Then complete the attached worksheets: (Note: the above problems were designed to ensure you have the skills to solve the worksheet problems. It is imperative to your learning of the problem solving technique to do the above problems BEFORE attempting the worksheet problems. You are graded on both! Homework notebooks are graded.)
CH-28-B-1:

For each of the equations below,

1) State what each term is in your own words ...
2) What the units of each term are...
3) What is the general use of that equation in your own words?

A. \[ \vec{\tau} = (\vec{\mu} \times \vec{B}) \]

B. \[ U(\theta) = -\vec{\mu} \cdot \vec{B} \]

C. \[ \vec{F}_B = i\vec{L} \times \vec{B} \]

D. \[ d\vec{F}_B = id\vec{L} \times \vec{B} \]

E. \[ \mu = NiA \]
CH-28-B-2:

A length of 60 cm of wire with mass of 23 g is suspended by a pair of flexible leads in a uniform magnetic field of magnitude 0.550 T as shown in the figure below. **What is the magnitude and the direction (left or right) of the current required to remove all tension in the supporting leads?**

Show all work
The following situations are separate. In the picture on the left, an electron has a velocity up in the plane of the paper in a constant magnetic field into the page. In the picture on the right, there is a segment of a wire with a current up in a constant magnetic field out of the page. The row in the following table that correctly gives the direction of the magnetic force on the electron and the direction of the magnetic force on the current is

<table>
<thead>
<tr>
<th>Row</th>
<th>Direction of the force on the electron</th>
<th>Direction of the force on the current</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>➡️</td>
<td>➡️</td>
</tr>
<tr>
<td>B</td>
<td>➡️</td>
<td>➡️</td>
</tr>
<tr>
<td>C</td>
<td>➡️</td>
<td>➡️</td>
</tr>
<tr>
<td>D</td>
<td>➡️</td>
<td>➡️</td>
</tr>
<tr>
<td>E</td>
<td>➡️</td>
<td>➡️</td>
</tr>
</tbody>
</table>

Show all work/Explain
A circular loop of radius 2m and carrying a current of 2A is in a magnetic field $B=0.3i\,T$ as shown below. Using the standard coordinate system (shown) the torque on the loop is closest to

A. $(15j)\,N-m.$  
B. $(4.9j)\,N-m.$  
C. $(7.5j)\,N-m.$  
D. $(3.3i)\,N-m.$  
E. 0.

Show all work