SM 223$_{\text{TSM}}$ Quiz #2 30 Aug 2012 Last Name _____ **Section** ○ **4023** ○ **5023** ○ **6023**

Time Limit: 5 minutes

Instructions: Open book. Open notes. Calculator allowed.

Instructions for all quizzes: **Do not discuss any aspect of this quiz with other midshipmen until after 6th period.**

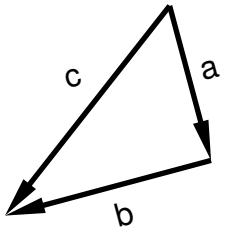
Print your last name above. Also, fill in the bubble for your section.

Fill the bubble for the correct answer. Also, write your answers in any blanks provided.

Your work will not be graded unless the instructions request you show your work.

The sketch shows three vectors $\mathbf{a}, \mathbf{b}$, and $\mathbf{c}$ that form a $(6, 8, 10)$-right triangle with

$$|\mathbf{a}| = 6$$
$$|\mathbf{b}| = 8$$
$$|\mathbf{c}| = 10.$$



1. Fill in the bubble for the correct equality.

   ○ $\mathbf{a} + \mathbf{b} = \mathbf{c}$ ○ $\mathbf{b} + \mathbf{c} = \mathbf{a}$ ○ $\mathbf{c} + \mathbf{a} = \mathbf{b}$

2. $\mathbf{c} \cdot \mathbf{c} =$

   ○ 0 ○ 10 ○ 20 ○ $10\sqrt{2}$ ○ 100 ○ none of above

3. $\mathbf{a} \cdot \mathbf{b} =$

   ○ 0 ○ 24 ○ 48 ○ -24 ○ -48 ○ cannot be determined

4. $\mathbf{a} \cdot \mathbf{c} =$ **Hint:** $\cos(\theta) = \frac{\text{adjacent}}{\text{hypotenuse}}$

   ○ 0 ○ 18 ○ 36 ○ 48 ○ 60 ○ cannot be determined