**Openers #8 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

*Each day when you come into class, there will be a problem projected for you to complete. Find the appropriate box to complete the problem in and work on it when you arrive.*

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| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 8-1  Solve ΔABC. Solve Solve ΔABC.  α = 103.45⁰, γ = 27.19⁰, b = 38.84 γ = 73.01⁰, a = 17.31, c = 20.24 |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 8-2   1. Solve ΔABC. 2. Solve ΔABC.   β=73⁰50’, c = 14.0, a = 87.0 a = 10, b = 15, c = 12   1. Approximate the area of ΔABC. γ=45⁰, b = 10.0, a = 15.0 |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 8-3-1  If a = 2<5,-4> & b = -<6,0>, find 4a + 5b and ||a||.  Sketch the vector a+b if a = -5i + 2j and b = i – 3j.  Find the magnitude of the vector **a** and the smallest positive angle θ from the positive x-axis if a=<-2, -2>  Approximate the magnitude of the resultant force between vector a=5.5 lb, b=6.2 lb, and θ=60⁰. |
| **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_**  **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_**  **Date:**  **\_\_\_\_ / \_\_\_\_/ \_\_\_\_** | 8-3-2  Approximate the magnitude and direction of the resultant vector if (a) 70 lb, 320⁰, and (b) 40 lb, 30⁰.  Find a unit vector in the same direction and opposite direction of a = 5i – 3j.  Find the net force (sum of forces) and the additional force G such that an equilibrium occurs (F=0). F1 = <4,3>, F2 = <-2,-3>, F3 = <5,2>  8-4  Find the dot product and the angle between the two vectors if a = 8i-3j and b = 2i-7j.  Show that the vectors are orthogonal. **8i – 4j, -6i – 12j**  Show that the vectors are parallel and determine whether they have the same direction or opposite directions. a = <6,18>, b = <-4,-12>  Determine m such that the two vectors are orthogonal. **5mi + 3j, 2i + 7j**  8-5-1  Find the absolute value of |1 – i|.  Represent the complex number (-3i)(2-i) geometrically.  Express the complex number in trigonometric form with 0≤θ<2π.   1. 3 - 3 ib) 15 c) 4i   8-5-2  Express the complex number in trigonometric form with 0≤θ<2π.   1. - i   Express in the form a + bi where a and b are real numbers. 8(cos + isin ).  Use trig forms to find z1z2 and z1/z2. z1= -5 + 5i and z2=-3i.  8-6  Use DeMoivre’s theorem to change the given complex number to the form a+bi, where a and b are real numbers.  (1-    8-6 (continued)  Find the five fifth roots of - – i.  Find the solutions of x6 – 64 = 0. |