**Trigonometry/Precalculus Name**

**6.3 Vector Combination in Component Form Date**

**Day \_\_\_\_\_\_\_ Block**

1) Two soccer players kick a soccer ball at the same time, one with a force of 50 N at a direction angle of 30 degrees and another with a force of 40 N at a direction angle of 100 degrees. (in standard position)

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| **a. Sketch and label a picture of each vector.**  | **b. Write the force vectors in component form.** |
| **c) What is the magnitude of the combined forces?** | **d) What is the direction angle of the resultant vector?** |

2) A commercial jet is flying from San Diego to Washington D.C.. The jet’s velocity with respect to the air is 575 miles per hour with a direction angle of 50 degrees. The wind is blowing towards the east with a velocity of 45 mph.

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| **a. Draw a picture.**  | **b. Write the velocity of the wind and the plane** **as vectors in component form.**  |
| **c) What is the speed of the jet with respect to the ground?**  | **d) What is the direction of the jet? (in bearing form)** |

3) Choose the figure that corresponds with the best response. Explain why you chose your answer.

a)

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| b) |  |

4a) Two forces of 10 kg and 24 kg act on an object at right angles. Find the resultant force.

b) Find the direction angle of the force.

