Gainesville State College Mathematics Tournament April 14, 2012

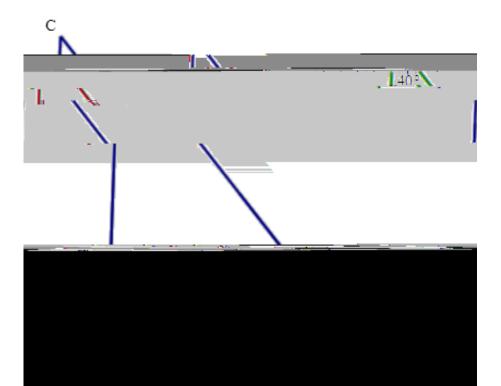
Andrea, Bob, Carrie, and Dave work at a college bookstore. Andrea and Bob work on Mondays; Andrea and Dave work on Tuesdays; Bob and Carrie work on Wednesdays; Carrie and Dave work on Thursdays.



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In the following figure, $\angle 1 = \angle 2$ and $\angle DAB = 103^{\circ}$.

Find the measure of $\angle DBA$.



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A rectangular room is 30 feet in length, 12 feet in width, and 12 feet in height.

A spider is at the middle of one of the 12 foot by 12 foot walls, one foot from the ceiling. A fly is at the middle of the opposite wall, one foot above the floor. The fly is so frightened that it can't move. What is the shortest distance that the spider must crawl in order to reach the fly?

Round your answer to the nearest tenth of a foot.



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A swimmer jumps off a bridge and begins to swim against the current. The same moment a hat blows off a man's head on the bridge and begins to float downstream. After 10 minutes, the swimmer turns back, reaches the bridge, and is asked to swim until he catches up with the hat. He does, under a second bridge 1000 yards from the first. The swimmer does not vary his effort. What is the speed of the current?

