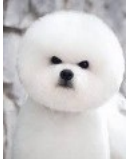


MCT 4C
Mr. Kempe

Name: _____
Due: _____

2. Reid is trying to determine the height of a tall building. He measures the angle of elevation to the building to be _____°. He walks _____m towards the building; the angle of elevation is now _____°. How tall is the building?
3. Kyleigh and Lexy are looking after a very stubborn dog, Fufu. They are each pulling on her (with their own leash) in an attempt to get her to move. Kyleigh is pulling with a force of _____N; Lexy, with a force of _____N. The angle between the leashes is _____°. With what force (and direction) must Fufu resist in order to stay put?

4. The distance from Toronto to Calgary is about 2700km [286°]. An airplane wishes to fly along this heading at _____ km/h. The average winds for the trip are _____ km/h [E]. What speed and heading should the plane set when it is...
 - a. flying from Toronto to Calgary?
 - b. flying from Calgary to Toronto?

Part C: When Mr. Kempe came back from vacation, he was a Tanned Gent [C, 5 marks]

In this section you will be making some vector drawings. Please use a ruler and be very careful with your drawings! (Using colours may help!)

1. Create three vectors, \vec{u} , \vec{v} , and \vec{w} that have different magnitudes and different (but not *opposite*) directions. [2]
2. Using the vectors you created, demonstrate the following properties of vector operations: [3]
 - a. $\vec{u} + \vec{v} = \vec{v} + \vec{u}$
 - b. $(\vec{u} + \vec{v}) + \vec{w} = \vec{u} + (\vec{v} + \vec{w})$
 - c. $3\vec{u} + 3\vec{v} = 3(\vec{u} + \vec{v})$