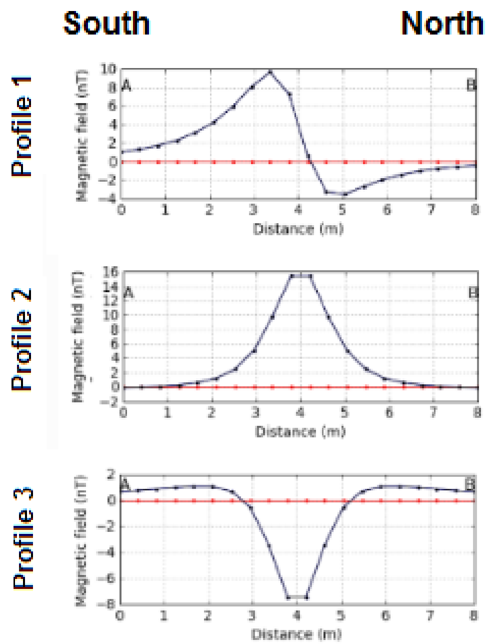
Name:____________________________________, **Team:**_________

1. What does the equation $\vec{M} = \kappa\vec{H}$ tell us?
   (a) Induced magnetization is in the same direction as the inducing field
   (b) Total magnetization is in the same direction as the inducing field
   (c) A larger magnetic susceptibility results in stronger magnetization for the same inducing field
   (d) 'a' and 'c' are correct
   (e) 'b' and 'c' are correct

2. Which of the following statements is **false** regarding remanent magnetization?
   (a) Remanent magnetization is stronger than induced magnetization
   (b) Remanent magnetization is weaker than induced magnetization
   (c) Remanent magnetization can't be in the same direction has induced magnetization
   (d) Remanent magnetization occurs in some minerals and in some man-made objects

3. What happens to the amplitude and shape of a magnetic anomaly when data are collected at a higher elevation versus at a lower elevation?
   (a) At higher elevation, the maximum amplitude is smaller and the anomaly is more compact
   (b) At higher elevation, the maximum amplitude is smaller and the anomaly is wider
   (c) At higher elevation, the maximum amplitude is larger and the anomaly is more compact
   (d) At higher elevation, the maximum amplitude is larger and the anomaly is wider

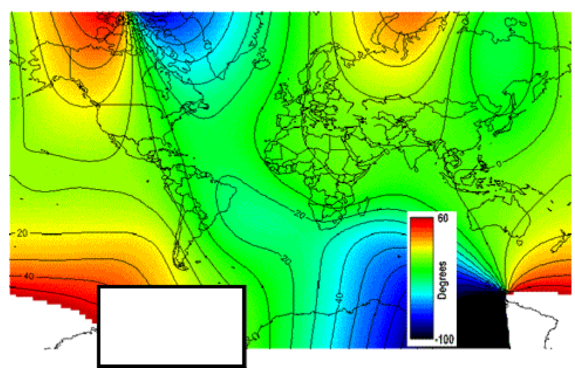
4. Assume you want to use the half-width formula to estimate the depth to a magnetized body from your anomaly. What are you assuming?
   (a) The magnetic anomaly can be approximated by a dipole or monopole
   (b) The declination angle of the Earth's field is small
   (c) The object only has induced magnetization
   (d) None of the above



5. Above, we see 3 magnetic anomaly profiles collected over a vertically oriented 2 m long pipe for various inclination angles of the Earth's field. Match the images to the correct inclination angle (assume no remanence). *The red line is just to show where 0 nT is*:
   (a) Profile 1 is 0 degrees, profile 2 is 45 degrees and profile 3 is 90 degrees
   (b) Profile 1 is 45 degrees, profile 2 is 0 degrees and profile 3 is 90 degrees
   (c) Profile 1 is 90 degrees, profile 2 is 45 degrees and profile 3 is 0 degrees
   (d) Profile 1 is 45 degrees, profile 2 is 90 degrees and profile 3 is 0 degrees

6. Why would you perform a 'reduction to pole' when processing total magnetic intensity data?
   (a) It can be used to infer whether targets are elongated or dipping
   (b) Total magnetic intensity data cannot be interpreted effectively without first performing a reduction to pole
   (c) So that the center of each magnetic anomaly lies above its corresponding susceptible body
   (d) 'a' and 'c' are correct

7. The following map is a map of:

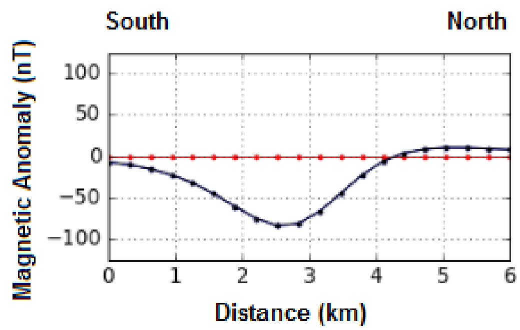


   (a) Magnetic field inclination.
   (b) Total Magnetic field.
   (c) Magnetic field declination.
   (d) None of the above.

8. Which of the following is **least** likely to affect a decision about magnetic survey measurement spacing?
   (a) Time variation of the inducing field.
   (b) Expected amplitude of anomaly.
   (c) Cost per measurement.
   (d) Type of target (regional geology, UXO, etc.).

9. At what scale are magnetic surveys most effective?
   (a) Small scale (10s of meters)
   (b) Moderate scale (100s of metres)
   (c) Large scale (kilometres)
   (d) All scales

10. You are performing a magnetic survey over a magnetized dyke in northern Canada (inclination $\sim 90^o$). The dyke is striking East-West. The total magnetic intensity data acquired along a south-north profile is shown below. Based solely on the shape of the anomaly, what can you conclude? *The red line is just to show where 0 nT is*



   (a) The dyke is dipping significantly
   (b) The dyke is remanently magnetized
   (c) The dyke extends all the way to the surface
   (d) I don't have enough information to draw any conclusions