

**Sample/study questions - Answers.
2020 map**

- 1) Give me distance and direction between the intersection of Durr Road and Umtanum Road and
 - a. Thrall 2.88 miles at 81 degrees
 - b. The "C" in Umtanum Creek 2.73 miles at 218 degrees
 - c. Long Tom Canyon at the irrigation canal. 1.99 miles at 358 degrees
- 2) Also give me the elevation of the 4 locations listed in question 1

Intersection: 2260

Thrall: 1430

C: 2260

NLT: 1650

- 3) Orienteering. Start at the intersection of Durr Road and Umtanum Road and go:
 - a. 2.65 miles at 329 degrees, then
 - b. 2.27 miles at 110 degrees, then
 - c. 1.93 miles at 337 degrees. Where are you? Damman School
- 4) Orienteering. Start at Thrall and go:
 - a. 4.17 miles at 3 degrees, then
 - b. 2.27 miles at 246 degrees, then
 - c. 1.4 miles at 2 degrees. Where are you? (approximately the courthouse)
- 5) Stream gradients: Calculate the gradient of Umtanum creek just south of the "C" in creek to the South edge of the map.

Elev. Change, $2180 - 1910 = 270$ ft. over 4.62" = 1.75 miles. Thus, 154 feet per mile. Or 2.9%

- 6) Stream gradient: Calculate the stream gradient of the stream in Benwy Canyon from the closest point to Durr Road to the Yakima River.

Elev change, $2600 - 1435 = 1165$ ft over 6.06 inches = 2.3 miles. Thus, 506 ft/mi or 9.6%

- 7) Give the UTM, and PLSS coordinates for
 - a. Damman School: Note, this is a quick estimate and just UTM. You can roll with these from here: 5204700m N, 684850m E. PLSS is T17M, R18E, S10, SW quarter.
 - b. Thrall
 - c. The intersection of Berry Road and Tjossem Road.
- 8) Triangulation: You are standing somewhere... and can see:
 - a. The junction of Barnes Road and Manastash Creek at 310 degrees
 - b. Thrall at 137 degrees, and S
 - c. Tjossem pond at 104 degrees. Where are you? Damman school. Nope, you can't escape this place.
- 9) Contouring... Hmmm... Draw an island.... The scale is one inch equals three miles. The contour interval is twenty five feet, the island is rectangular in shape, being 18 miles long in the east-west direction and 12 miles wide in the north/south

direction. Two peaks, one tops at 122 feet (east), the other at 157 feet (west). The easterly mountain is steeper to the N, the westerly one is steeper to the S. Include two streams (you pick the locations).

10) Isoline exercise. Look at the below map and draw the isotherms. Assume a 10 degree interval.

