Name: _____

On the next page is a small part of the USGS topographic map of the Horsetooth Reservoir, Colorado, 7.5-minute quadrangle map.

1. Using a regular pencil, *lightly* draw where a stream might flow at the bottom of the stream valley that extends from the lower middle to the upper right corner of the map area. This is simply a technique to quickly familiarize yourself with the map, allowing you to recognize the low points (and high points) on this topographic map. Which way would the water flow down that main drainage valley before it turns to flow out of the map area?

Answer: _____

2. Given the bar scale on the map, what is the fractional scale of the map? Hints: measure the bar scale to the nearest millimeter, and remember that 1 inch = 25.4 mm *exactly*.

Computation and answer:

3. The map trace of an inclined contact between two geological units is shown as a blue curve labeled "contact". Carefully draft a correct strike-and-dip symbol at a convenient place along the contact, and use the map scale and appropriate trigonometry to estimate the dip angle of the contact. Add that dip angle to the strike-and-dip symbol. Determine the right-hand-rule strike of the contact, and add that strike azimuth to the appropriate end of the strike line. Express the strike azimuth and dip angle as integers, in degrees. Show your work, including a representation of the right triangle you used to solve for dip angle.

Computation, visualization sketch, and answer:

4. Does the contact "V" in an upstream or downstream direction?

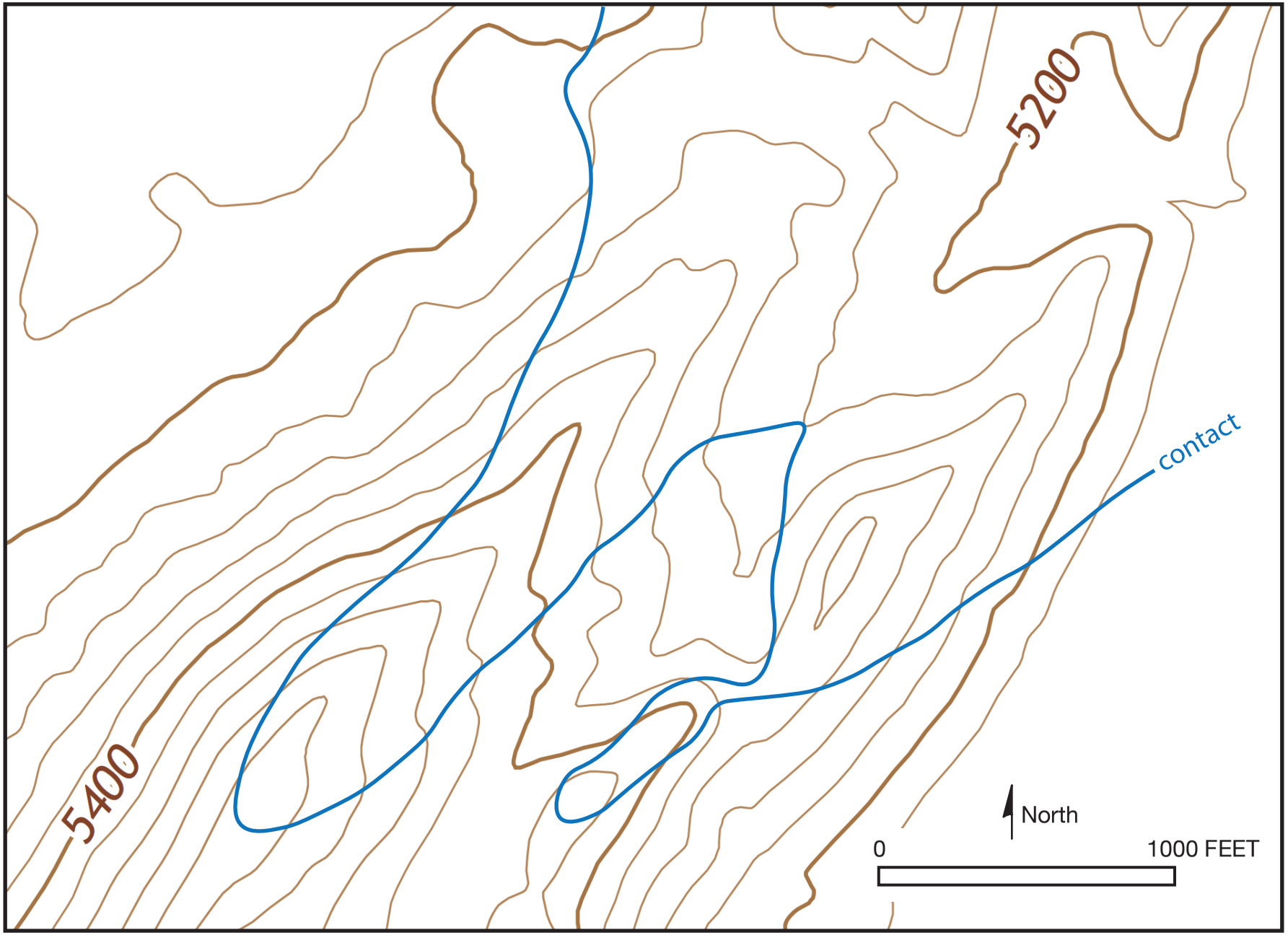
Answer:

5. Is the dip angle of the contact *greater than* or *less than* the angle at which the stream channel is inclined? Explain your answer.

Answer in a complete sentence:

6. Is the contact surface planar or irregular/curved/folded? Explain your answer.

Answer in a complete sentence:



Topographic contours from USGS topographic map of Horsetooth Reservoir 7.5 minute Quadrangle, Colorado, 2016
https://prd-tnm.s3.amazonaws.com/StagedProducts/Maps/USTopo/PDF/CO/CO_Horsetooth_Reservoir_20160901_TM_geo.pdf

Inclined-contact-topo.pdf