

4pts

1. In reference to the Introductory Video exercise, briefly discuss the timing and location of the Loma Prieta earthquake. When did it occur? Where was the epicenter?

1 pt. { - OCTOBER 17, 1989 "WRECK SERIES EARTHQUAKE", BAY AREA, CA
 1 pt. { - EPICENTER: LOMA PRIETA, SOUTH OF SAN JOSE, CA - SANTA CRUZ MOUNTAINS
 MAGNITUDE ~ 7.0

Describe the tectonic setting and the primary source of the earthquake.

2 pt. { - SAN ANDREAS FAULT ZONE
 2 pt. { - TRANSFORM PLATE TECTONIC BOUNDARY BETWEEN PACIFIC PLATE & NORTH AMERICAN PLATE

What was the significance of the Loma Prieta event in terms of environmental cost to humans.

1 pt. { BRIDGE COLLAPSE, \$5 BILLION DAMAGE
 63 people DEAD; 3200 INJURED

4pts

2. In reference to the Introductory Video exercise, briefly discuss the location and history of the Hanford Reservation. Where is it located? What was its original purpose? and why is it of environmental significance.

2 pt. { - TRI-CITIES AREA, WASHINGTON STATE, ON COLUMBIA RIVER
 2 pt. { - LEGACY: WWII PRODUCTION PROCESSING PLANT
 - TOXIC SOIL & H₂O CONTAMINATION - RADIOACTIVE WASTE
 NUCLEAR BOMB PRODUCTION

List and briefly discuss three of the primary environmental concerns associated with Hanford.

2 pt. { - PORTLAND DOWN RIVER FROM HANFORD
 2 pt. { - GROUNDWATER - SOIL - RIVER CONTAMINATED
 - ATMOSPHERIC RELEASE
 - HAZARDOUS WASTE, ECOSYSTEM DEGRADATION

3. Define and discuss the difference between the terms "hazard" and "risk", as used in Environmental Geology.

1.5 pt. { HAZARD = OCCURRENCE OF NATURAL PHENOMENA

1.5 pt. { RISK = PROBABILITY OF IMPACT TO HUMAN LIFE, HEALTH, & PROPERTY

3 pts

List and discuss **three** tectonic-related hazards and **two** climate surface-related hazards associated with Oregon that pose a risk to its citizens.

1.5 pt

TECTONIC HAZARDS

- EARTHQUAKES

- Volcanic Eruptions (LAVA, ASH, LAVA)

- TSUNAMIS

1.5 pt SURFACE HAZARDS

- LANDSLIDES

- FLOODS

6 pts

5. Problem Solving:

- a. A straight stretch of road on an aerial photo was found to be 1000 meters long in actual ground distance. The same segment on the photograph is 0.5 inches; what is the fractional scale of the photograph? SHOW ALL YOUR MATH WORK.

3 pts

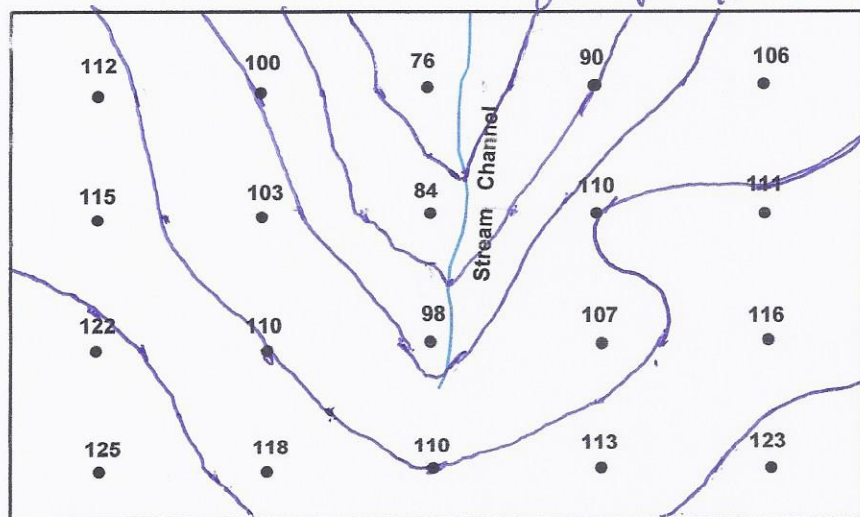
$$\frac{0.5 \text{ in}}{0.5 \text{ in}} = \frac{1000 \text{ m} \left(\frac{3.28 \text{ ft}}{1 \text{ m}} \right) \left(\frac{12 \text{ in}}{1 \text{ ft}} \right)}{39,360 \text{ in}}$$

1:78,720

3 pts

- b. Contour the elevations on the map below using a contour interval of 10 feet. SHOW ALL YOUR WORK.

C.I. = 10 ft



ELEVATION RANGE

MAX = 125

MIN = 76

10 ft Contours

- 80 -

- 90 -

- 100 -

- 110 -

- 120 -