

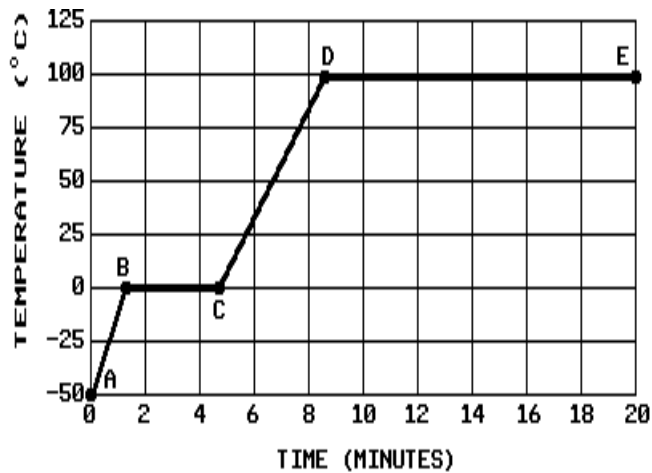
WS Rate of Change

Name: _____

- ___ 1) According to the *Earth Science Reference Tables*, the rate of temperature increase below the Earth's surface is *greatest* between depths of
- A) 2500 and 3500 km
 - B) 1500 and 2500 km
 - C) 250 and 500 km
 - D) 3500 and 4000 km

- ___ 2) Two geologic surveys of the same area, made 50 years apart, showed that the area had been uplifted 5 centimeters during the interval. If the rate of uplift remains constant, how many years will it take for this area to be uplifted a total of 70 centimeters?
- A) 250 years
 - B) 500 years
 - C) 700 years
 - D) 350 years

- ___ 3) The graph below shows the temperatures recorded when a sample of water was heated at a constant rate from -50°C to 100°C during a 20-minute period.

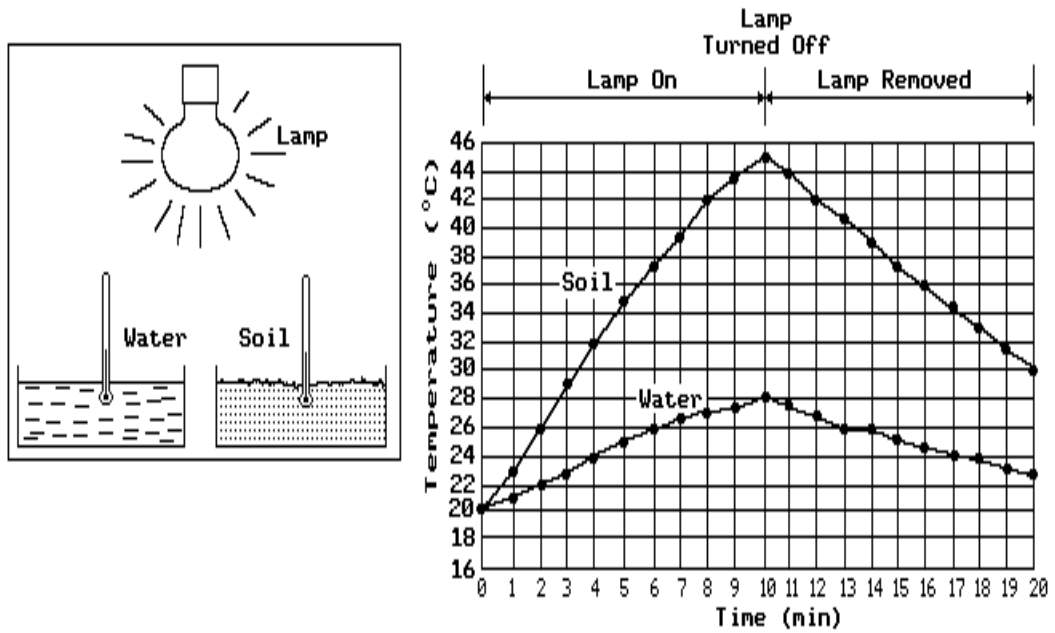


Between which points was the temperature changing at the *greatest* rate?

- A) A and B
- B) B and C
- C) C and D
- D) D and E

___ 4)

In the diagram below, equal masses of water and soil are located at identical distances from the lamp. Both were heated for ten minutes and then the lamp was removed. The water and soil were then allowed to cool for ten minutes. The graph shows the temperature data obtained during the investigation.



What was the rate at which the soil temperature changed during the first ten minutes of the investigation?

- A) $2.5\text{ C}^\circ/\text{min}$
 B) $25\text{ C}^\circ/\text{min}$

- C) $8\text{ C}^\circ/\text{min}$
 D) $0.8\text{ C}^\circ/\text{min}$

___ 10) On the Hurricane Tracking Map below, Table I below represents the storm track data for an Atlantic hurricane. Location, wind velocity, air pressure, and storm strength are shown for the storm's center at 3 p.m. Greenwich time each day. Table II shows a scale of relative storm strength. The map shows the hurricane's path.

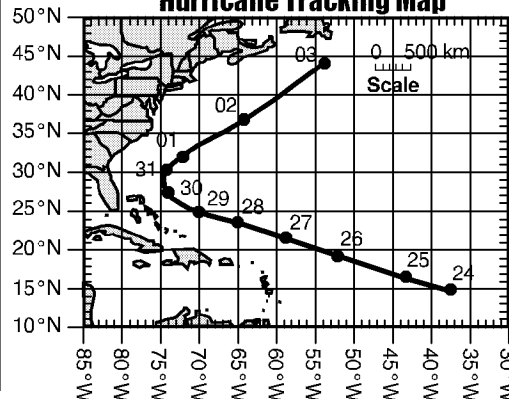
Data Table I

Latitude (°N)	Longitude (°W)	Date	Wind Velocity (knots)	Air Pressure (millibars)	Storm Strength
14	37	Aug. 24	30	1,006	Tropical depression
16	44	Aug. 25	70	987	Category-1 hurricane
19	52	Aug. 26	90	970	Category-2 hurricane
21	59	Aug. 27	80	997	Category-1 hurricane
23	65	Aug. 28	80	988	Category-1 hurricane
25	70	Aug. 29	80	988	Category-1 hurricane
27	73	Aug. 30	65	988	Category-1 hurricane
30	74	Aug. 31	85	976	Category-2 hurricane
32	72	Sept. 01	85	968	Category-2 hurricane
37	64	Sept. 02	70	975	Category-1 hurricane
44	53	Sept. 03	65	955	Category-1 hurricane

Data Table II

Storm Strength Scale	Relative Strength
Tropical depression	WEAKEST ↓ STRONGEST
Tropical storm	
Category 1	
Category 2	
Category 3	
Category 4	
Category 5	

Hurricane Tracking Map



In the table below, calculate the average daily rate of movement of the hurricane during the period from 3 p.m. August 24 to 3 p.m. August 28. The hurricane traveled 2,600 kilometers during this 4-day period. [Follow the directions given below.]

a	rate of change =
b	rate of change =
c	rate of change =

- (a) Write the equation used to determine the rate of change.
- (b) Substitute data into the equation.
- (c) Calculate the rate and label it with the proper units.