AP Bio FRQ Fridays

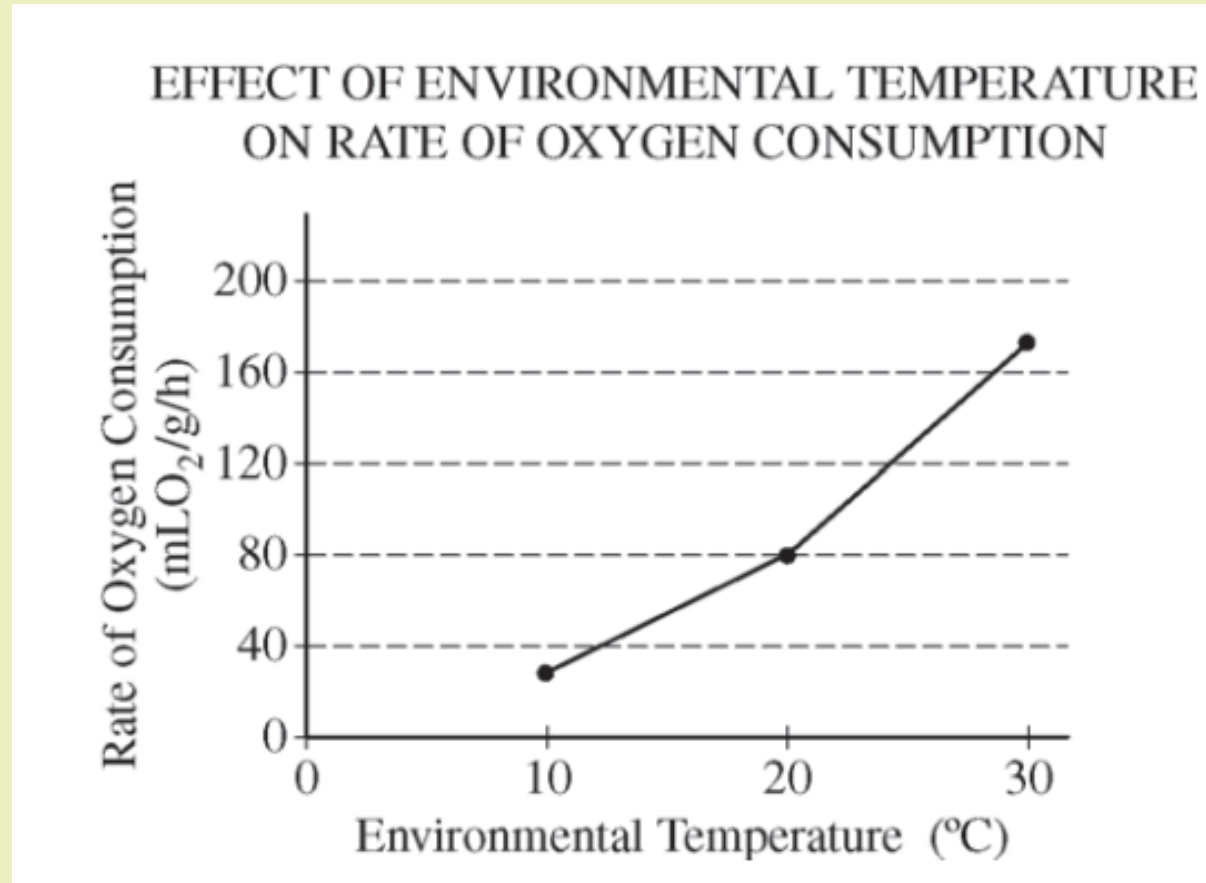## 2014 #7
Thermoregulation

Hi!

(a) Based on the graph, **describe** a specific method of thermoregulation used by the species of animal. **Provide** support for your answer using the data.

EFFECT OF ENVIRONMENTAL TEMPERATURE
ON RATE OF OXYGEN CONSUMPTION

Rate of Oxygen Consumption $(mL\,O_2/g/h)$ vs. Environmental Temperature (°C)

(a) Based on the graph, **describe** a specific method of thermoregulation used by the species of animal. **Provide** support for your answer using the data.

Describe method (**1 point**)	Support (**1 point**)
This species is an ectotherm/incapable of endoregulation	• Increased metabolic rate/O_2 consumption rate/respiration rate with increased temperature • Decreased metabolic rate/O_2 consumption rate/respiration rate with decreased temperature • If the animal were endothermic, O_2 consumption rate/respiration rate/metabolic rate would increase with decreasing temperature
Behavior to adjust body temperature, i.e.,seeking shade, basking in the sun, burrowing in mud, evaporative cooling	• Increased metabolic rate/O_2 consumption rate/respiration rate with increased temperature • Decreased metabolic rate/O_2 consumption rate/respiration rate with decreased temperature • This species is ectothermic/incapable of endoregulation

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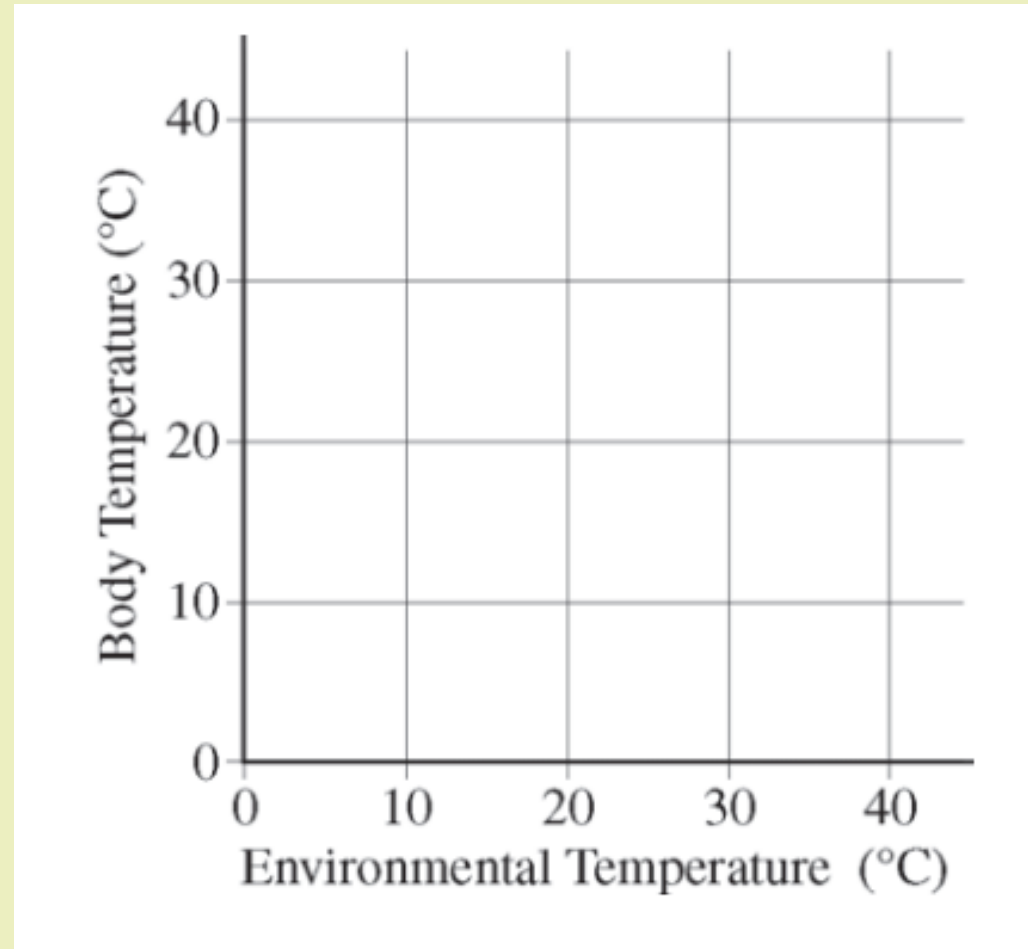
A method of thermoregulation is ectothermic regulation experienced by cold-blooded animals such as reptiles like lizards. Ectothermic regulation means that the environment controls the body temperature of the organism. As the environmental temperature increased, body temperature and other metabolic activities increased causing an increase in rate of oxygen consumption.
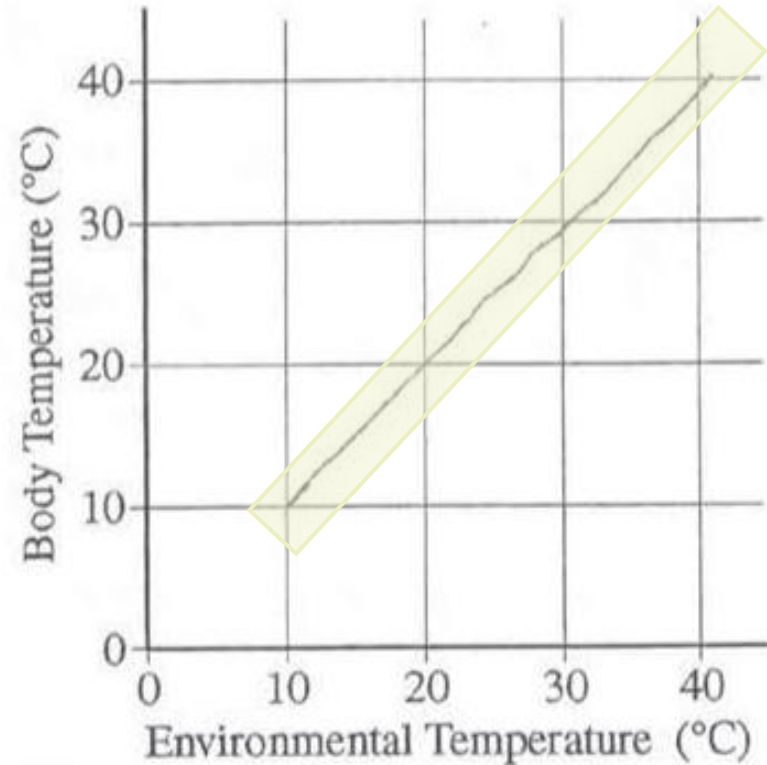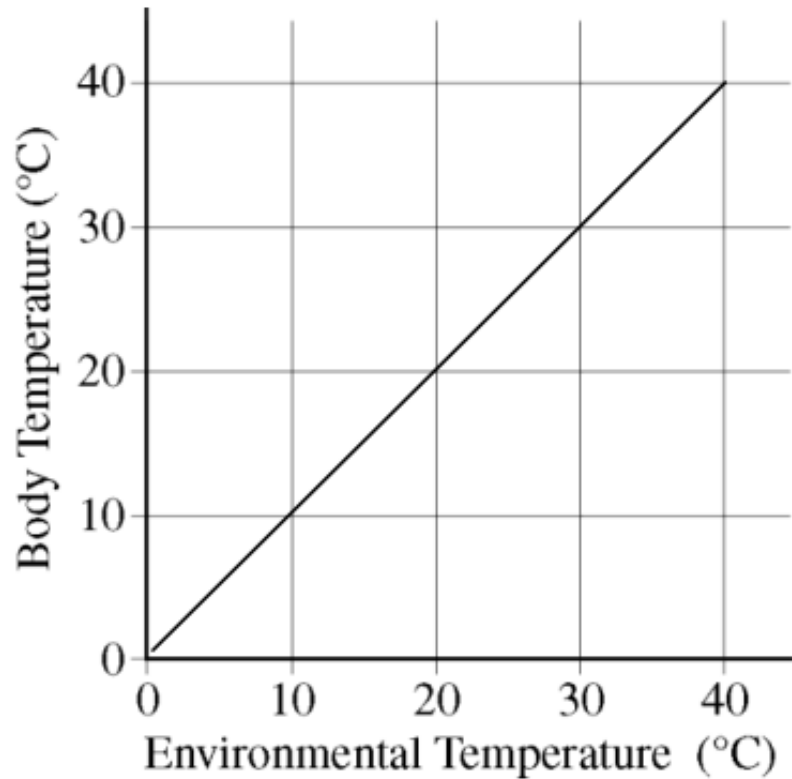
Hi!

(b) On the labeled axis provided below, **draw** a line to indicate the most likely relationship between body temperature and environmental temperature in the species.

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- Line/curve with positive slope