

Calibration lab 3. Reading a physiological chart

Four exercises on the same two-channel chart format used in the case evidence.

CLAIM CEILING. READ THIS FIRST.

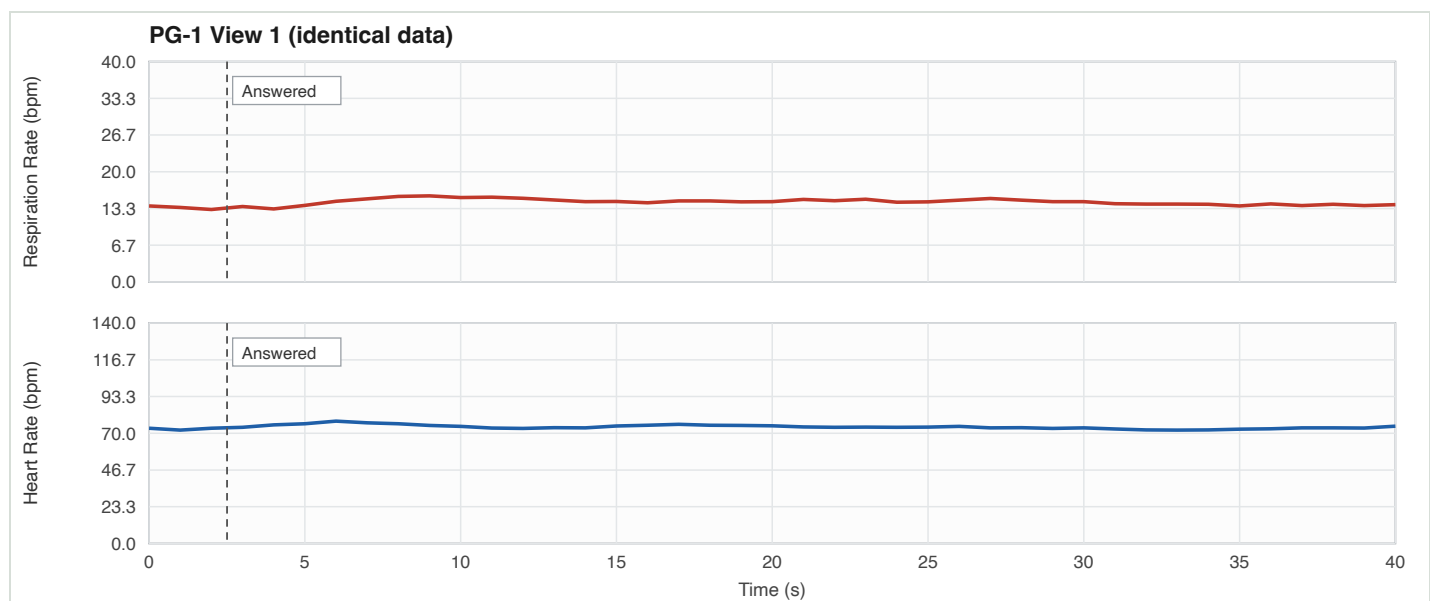
- **Polygraph.** It records breathing and heart rate. A change in either one is a physiological response. It is not a measurement of lying, and nothing in this unit produces a deception call.
- **Hair.** Microscopic similarity can support consistency or support exclusion. It cannot identify one person.
- **Fingerprint.** Pattern class can narrow a field or exclude a person. By itself it cannot name a source, and it never says when or why a finger touched something.
- **Timeline.** A scheduled event is not proof the person was there. Time of death is not established in the early case evidence.

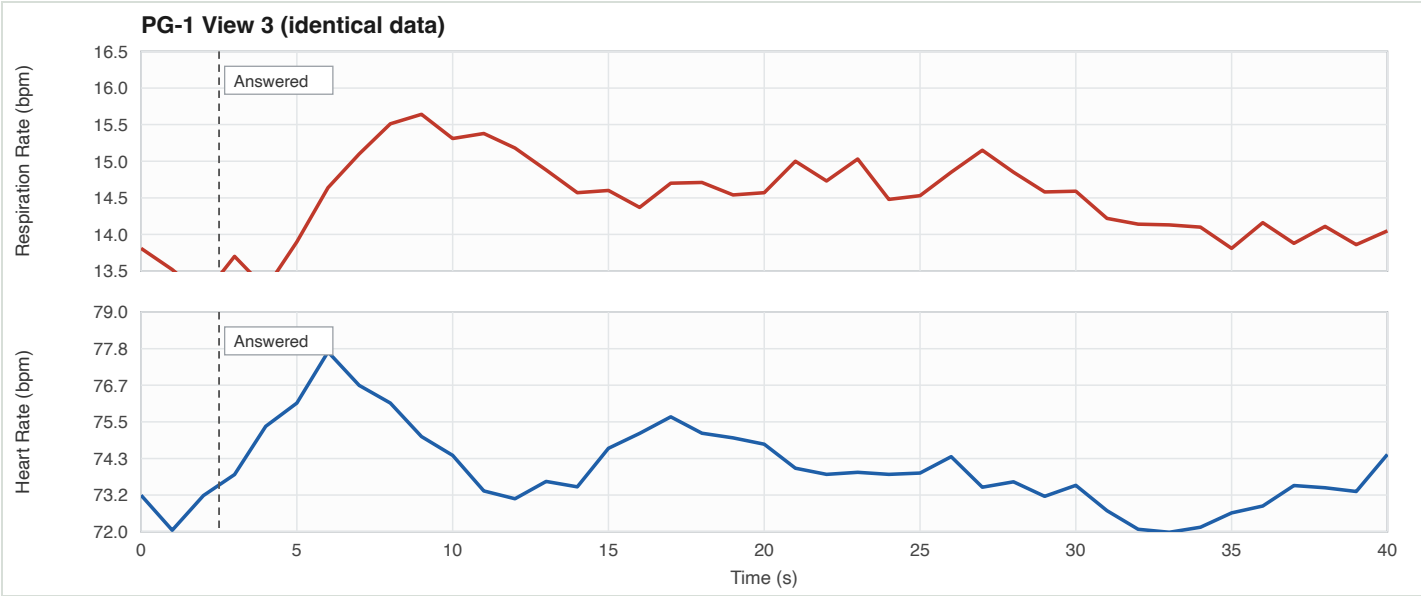
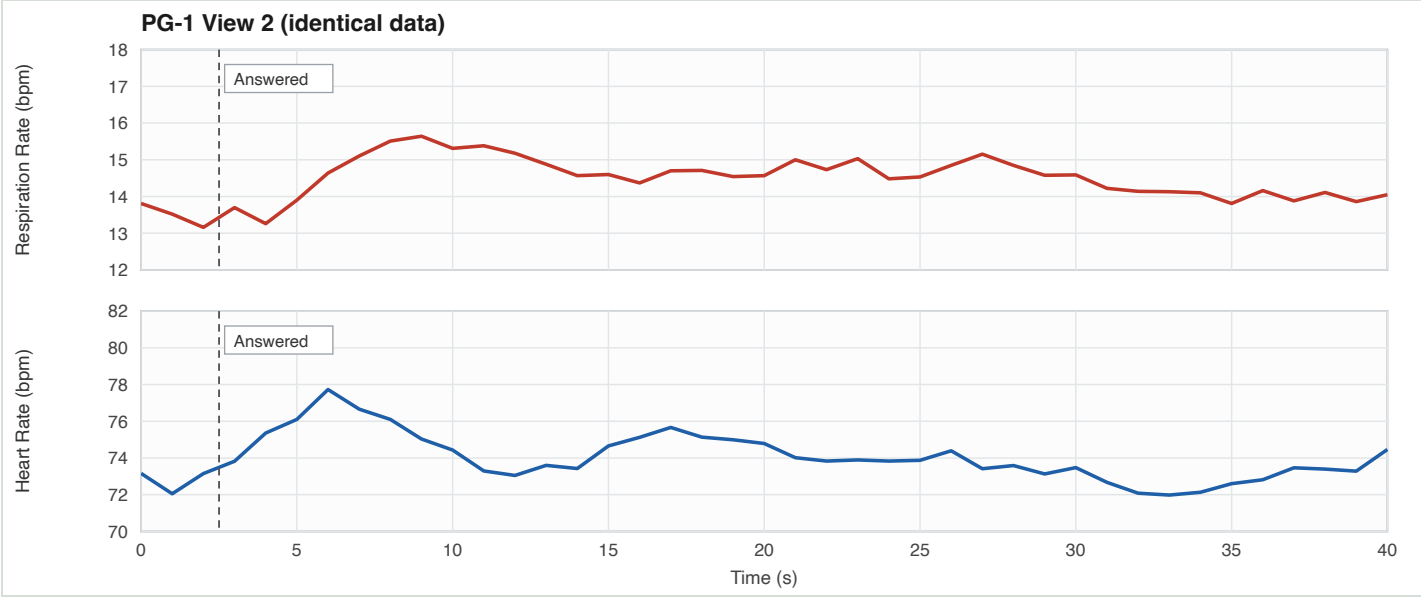
WHAT THIS LAB IS

This is a **measurement** lab. You will get very good at measuring a change in breathing rate and heart rate. At the end you will find out that being good at that measurement still does not let you tell who is lying. That result is the point, and it is not a trick.

PG-1. Read the axis before you read the line

The three charts below plot **exactly the same numbers**. Only the y-axis range changes.





View	Heart rate axis: lowest and highest	How big does the response LOOK?	Measured change in bpm
1			
2			
3			

Then answer. If the measured change is the same in all three, what exactly changed between the pictures?

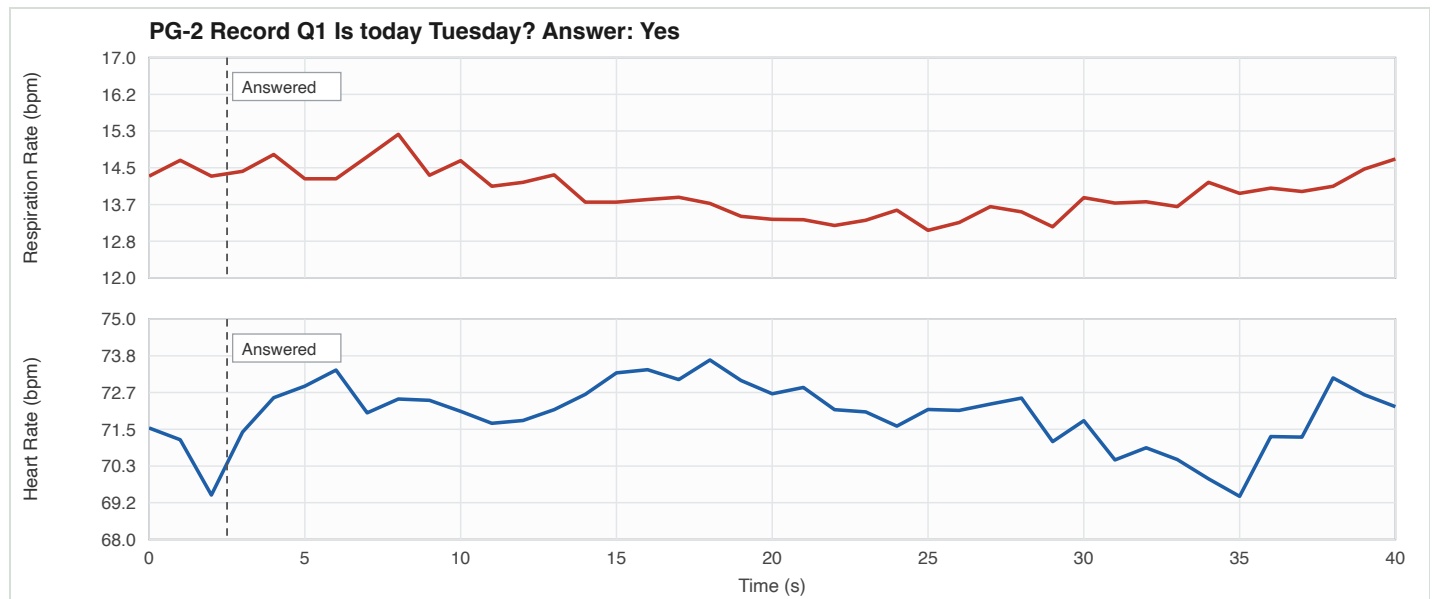
PG-2. Measure a baseline and a change

THE TWO WINDOWS, AGREED BEFORE YOU MEASURE

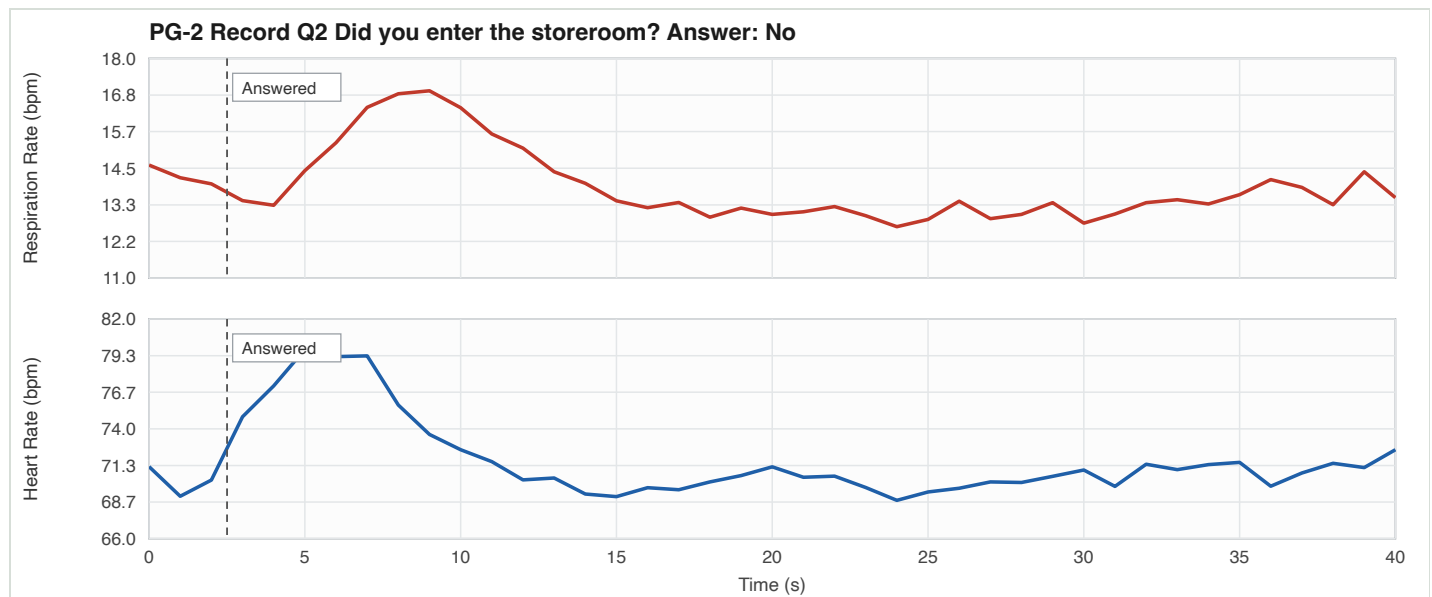
Baseline window: 0 s to 2.5 s, which is everything before the Answered marker. Take the average.

Response window: 3.0 s to 18.0 s. Take the highest point inside it.

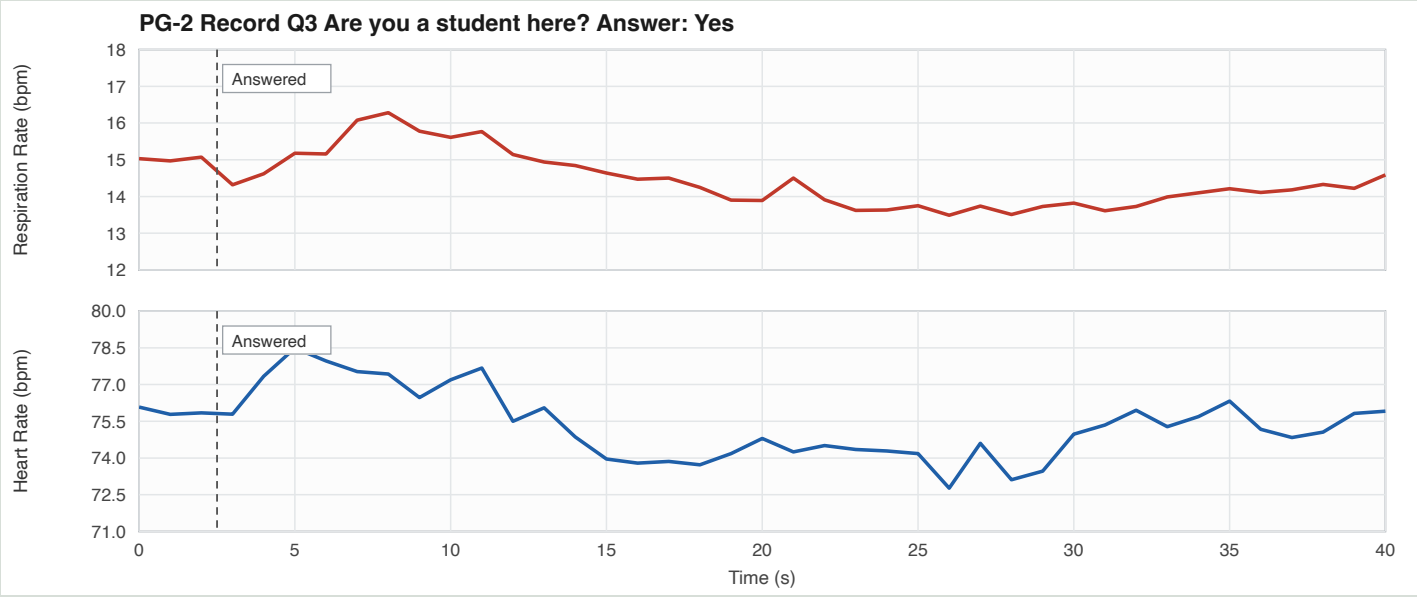
Change = peak minus baseline, in bpm.



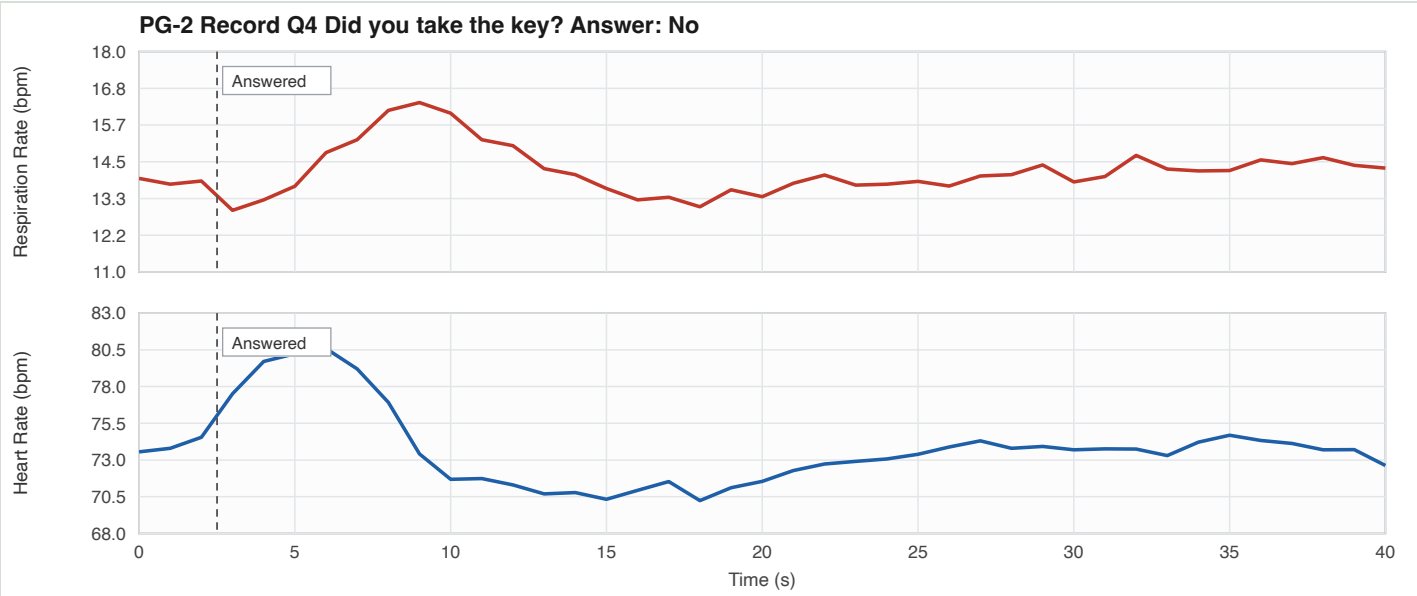
Note that the two panels use different y-axis ranges. Read both scales before you compare anything.



Note that the two panels use different y-axis ranges. Read both scales before you compare anything.



Note that the two panels use different y-axis ranges. Read both scales before you compare anything.



Note that the two panels use different y-axis ranges. Read both scales before you compare anything.

Record	Control or relevant?	HR baseline	HR peak	HR change
Q1				
Q2				
Q3				
Q4				

Now compare. Are the relevant questions producing a bigger change than the control questions? Write the two numbers you are comparing, with units.

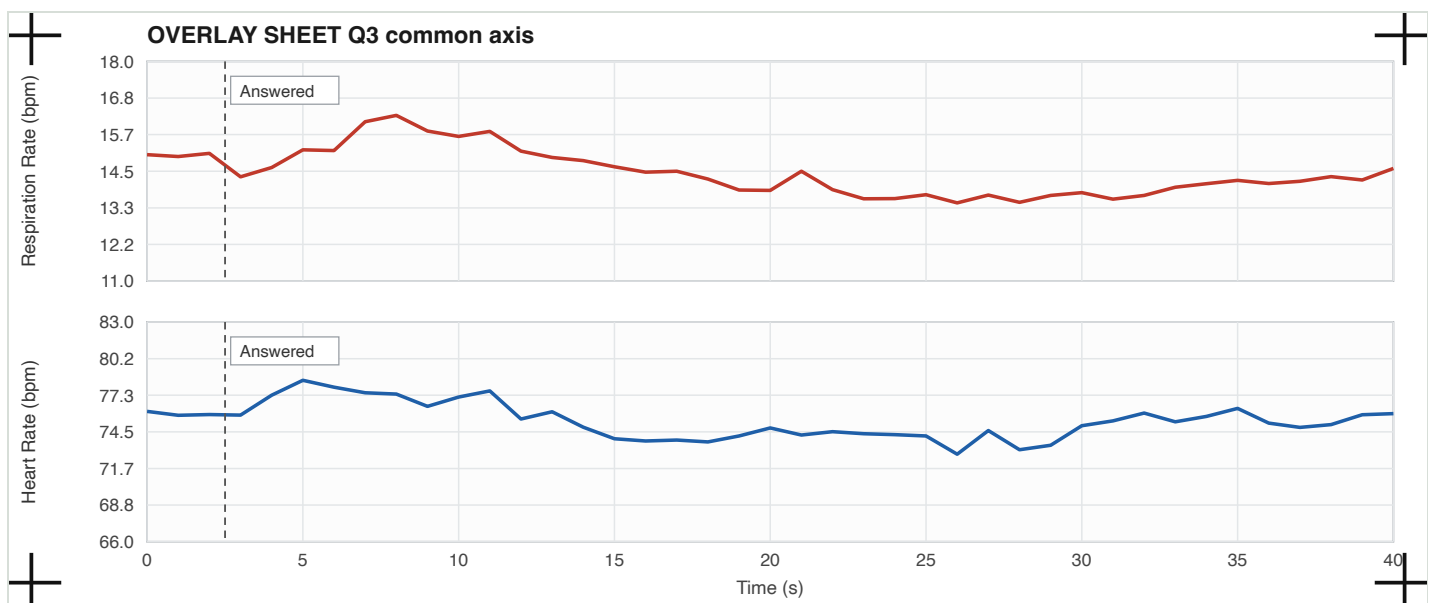
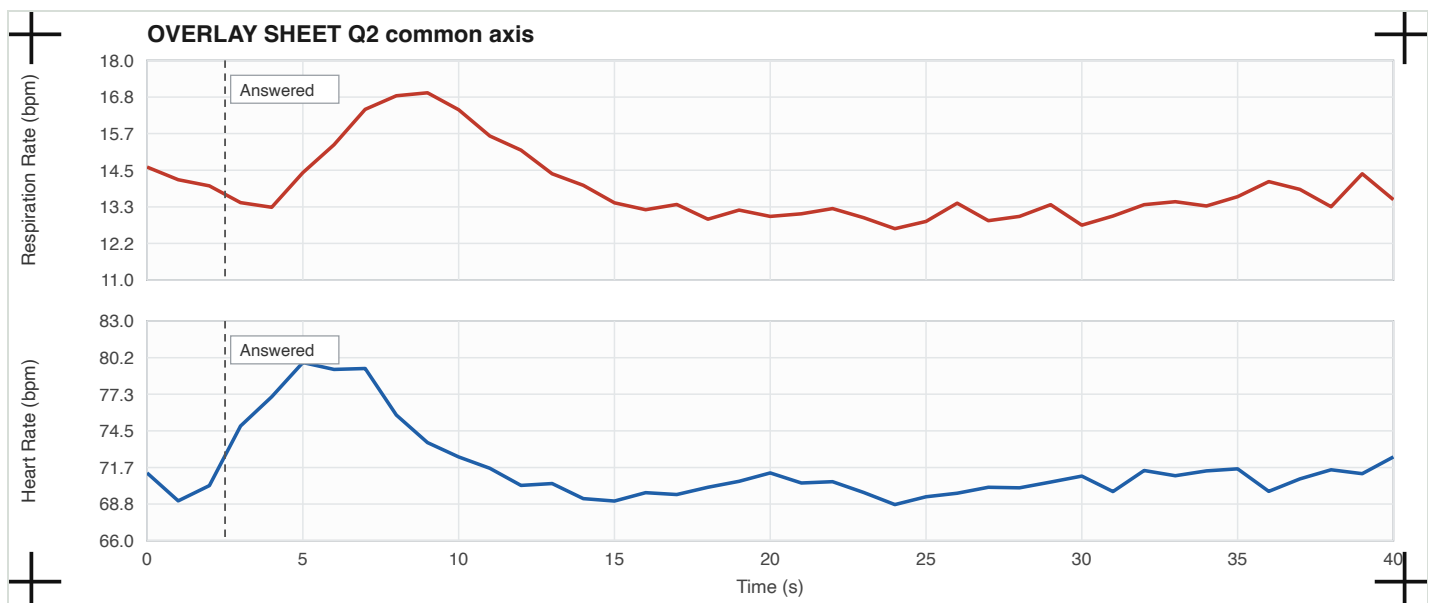
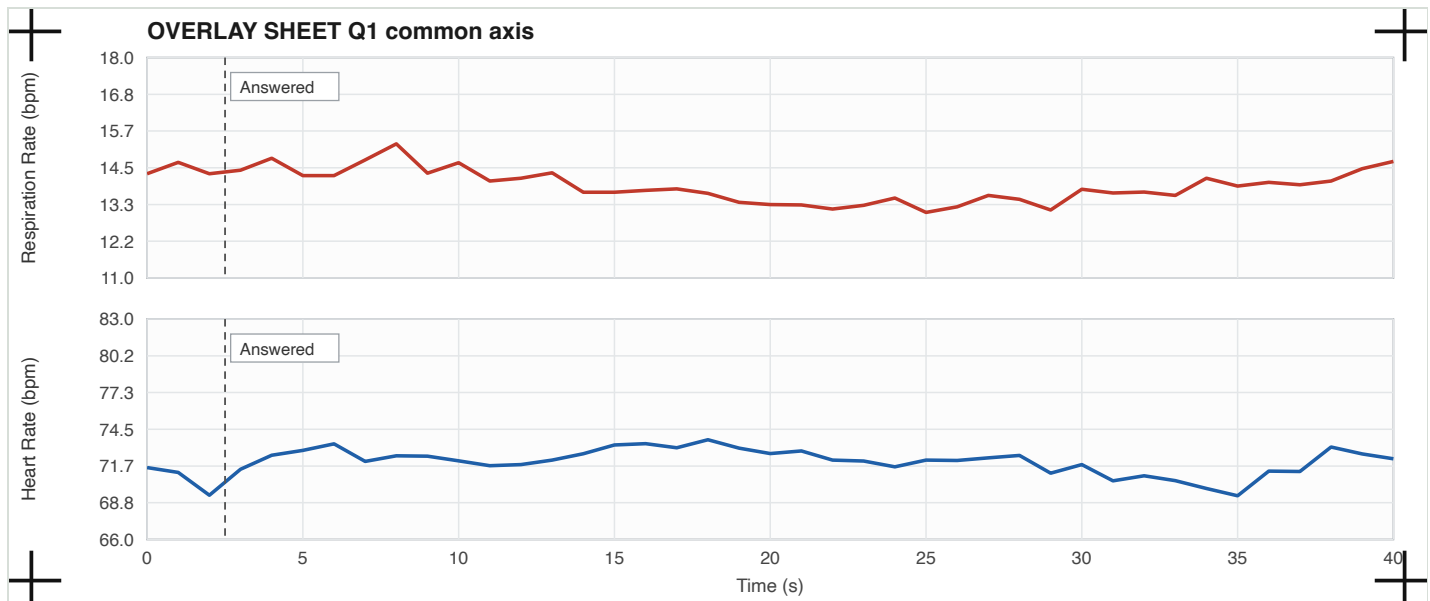
PG-2b. Stack the charts

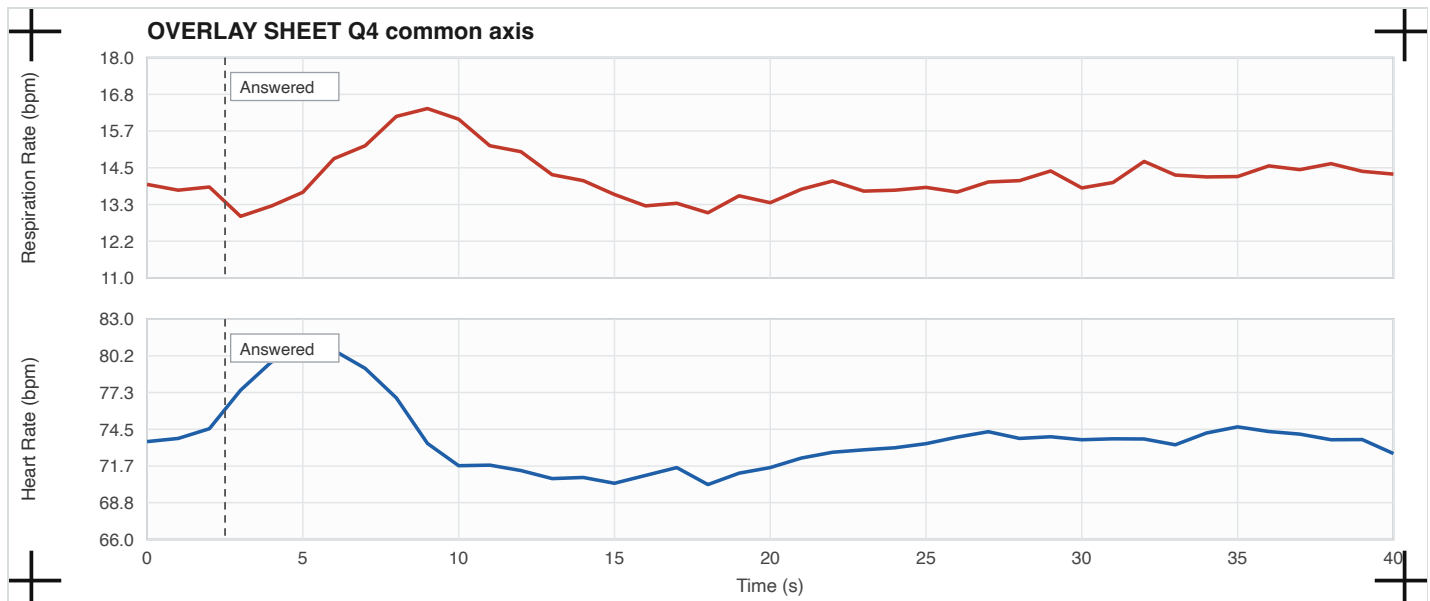
The four overlay charts are on the **next two pages**, labelled OVERLAY SHEET Q1 to Q4. Print those two pages on transparency film, cut the four charts apart, then lay them on top of each other and line up the crosses in the corners. Now you can see the four responses as one picture.

This page has no charts on it. Do not put it through the transparency feed.

WHY THESE FOUR CAN BE STACKED AND THE EARLIER ONES CANNOT

Every one of the four overlay charts uses the **same** axis: respiration 11 to 18 bpm, heart rate 66 to 83 bpm. The charts back in PG-2 each chose their own axis. If you stack those, you are comparing how far the ink moved on the paper, not how much the person's heart rate changed. Stacking is only a fair comparison when the scales already agree.



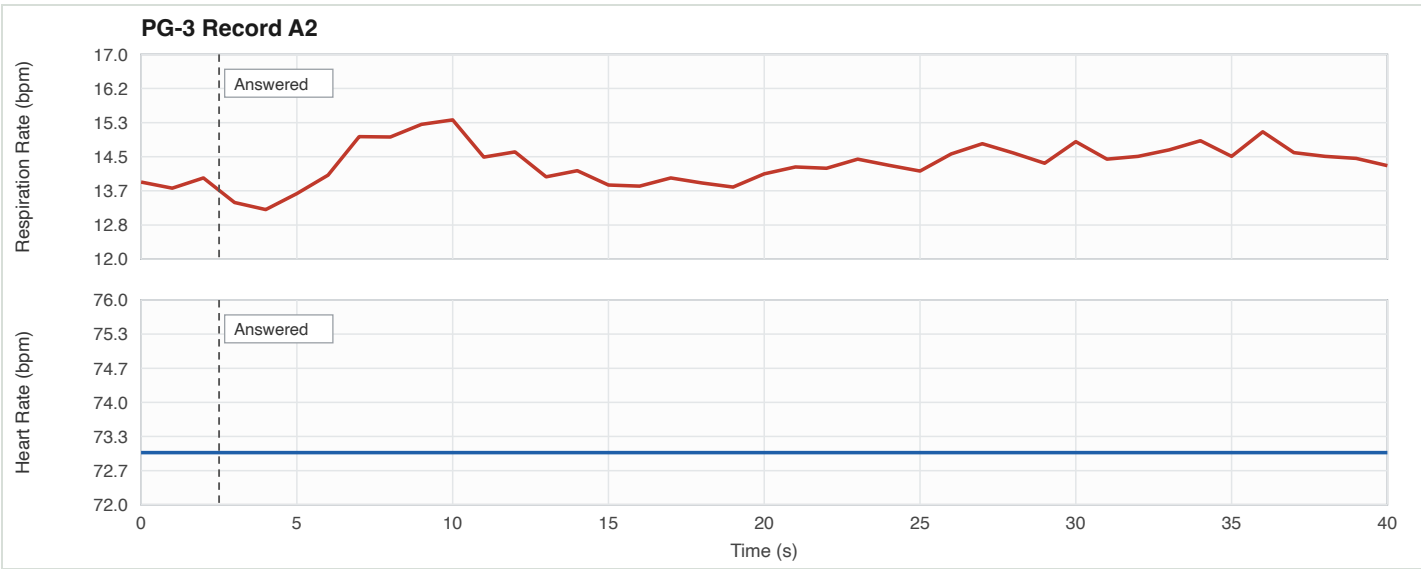
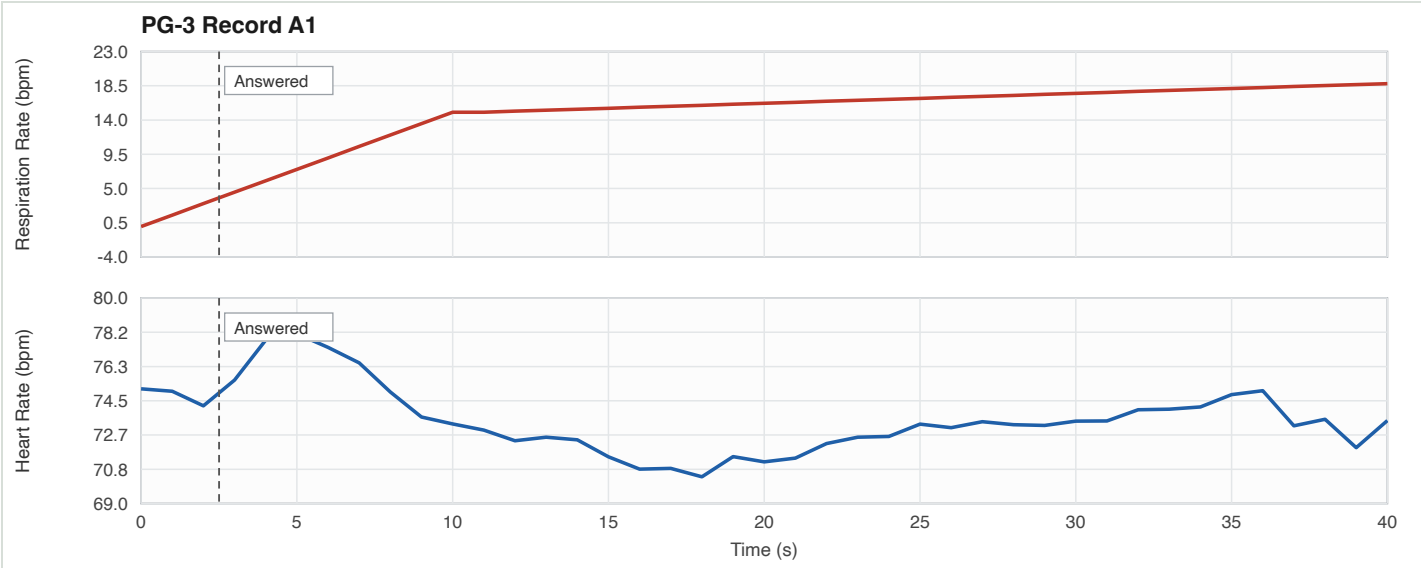


After you stack them

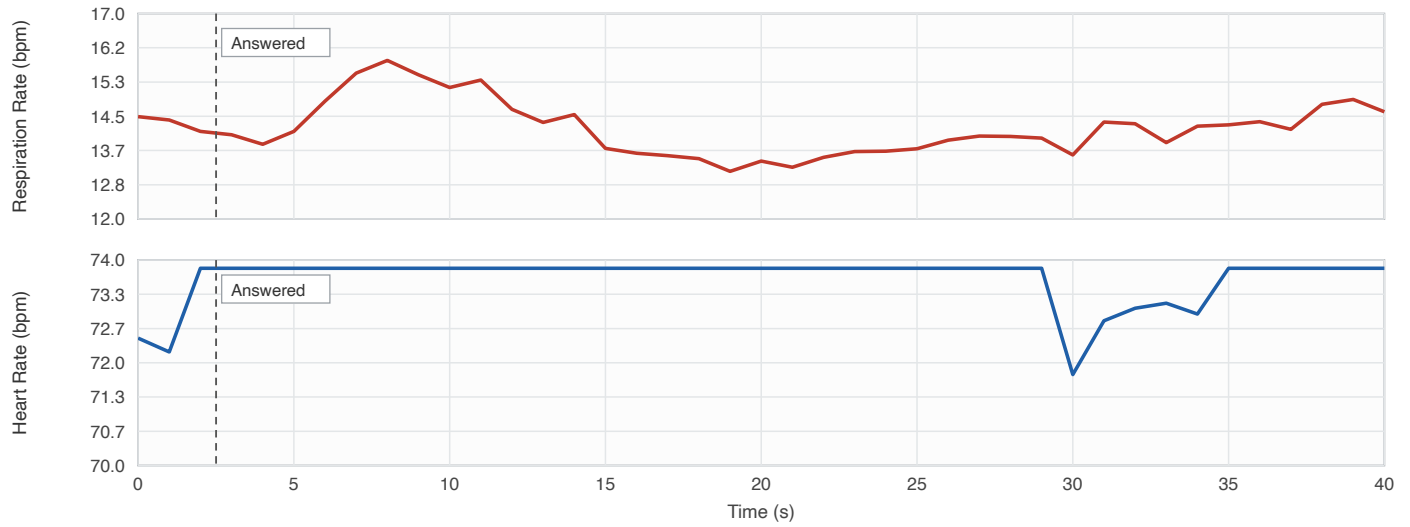
1. Which record shows the largest heart rate change? Is that the same one you picked when you measured them separately in PG-2?
2. A classmate says the relevant questions "obviously" produced bigger responses. What number would you need to show them to settle it, and where would you get it?

PG-3. Some records cannot be measured at all

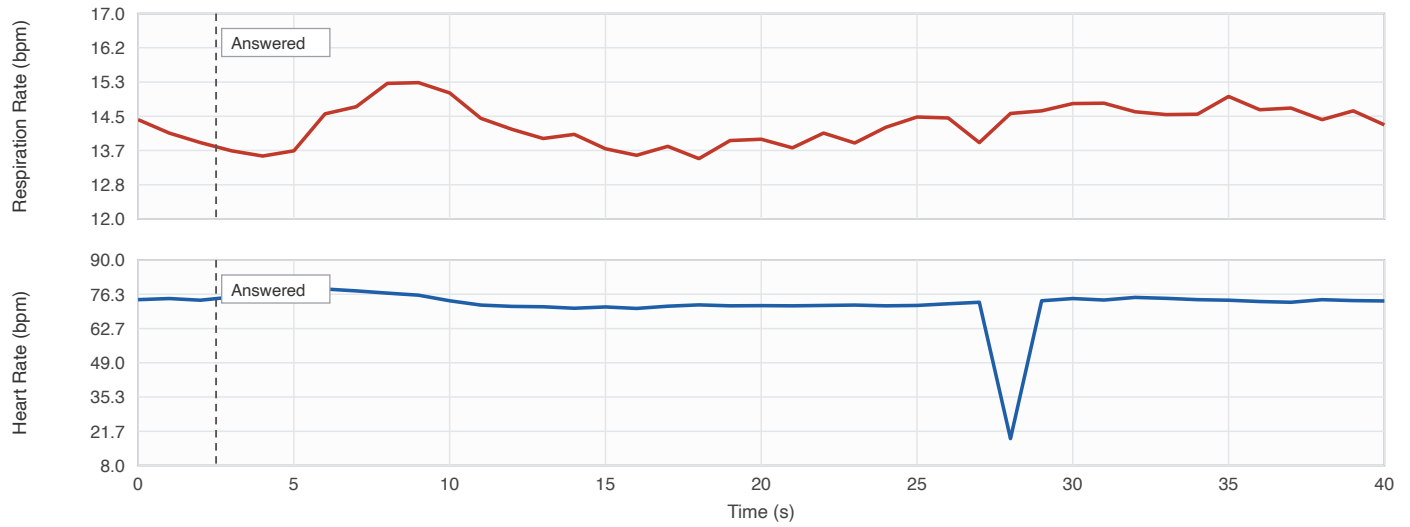
Before you measure anything, ask whether the record is even possible. A living person always breathes and always has a pulse. If a trace says otherwise, the instrument failed, and the honest answer is to refuse the record.



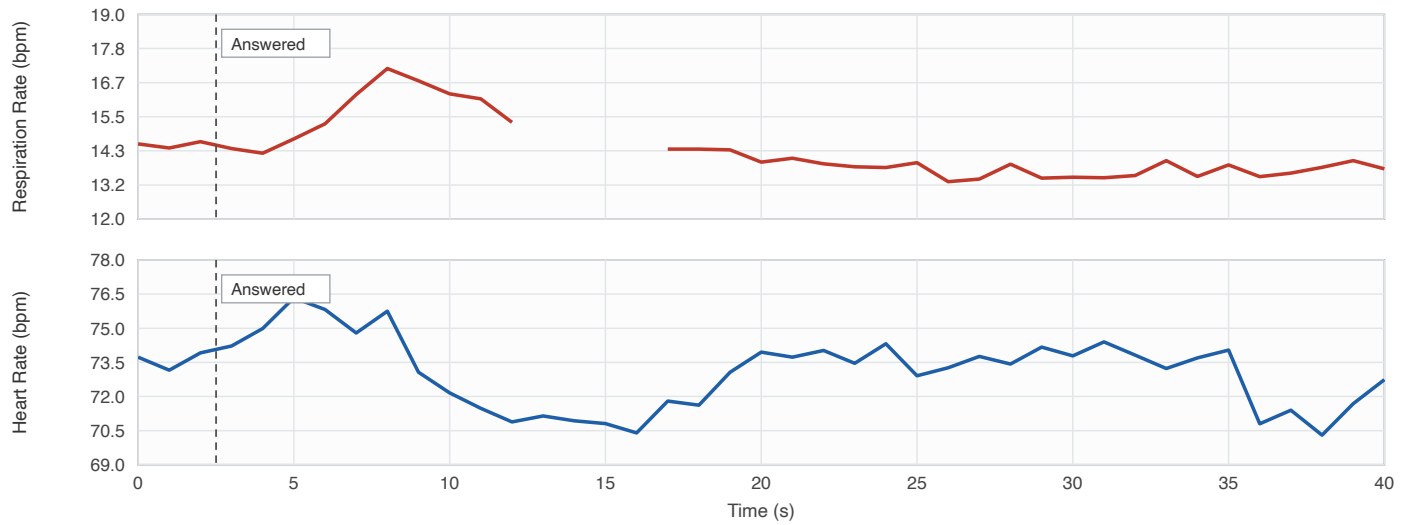
PG-3 Record A3

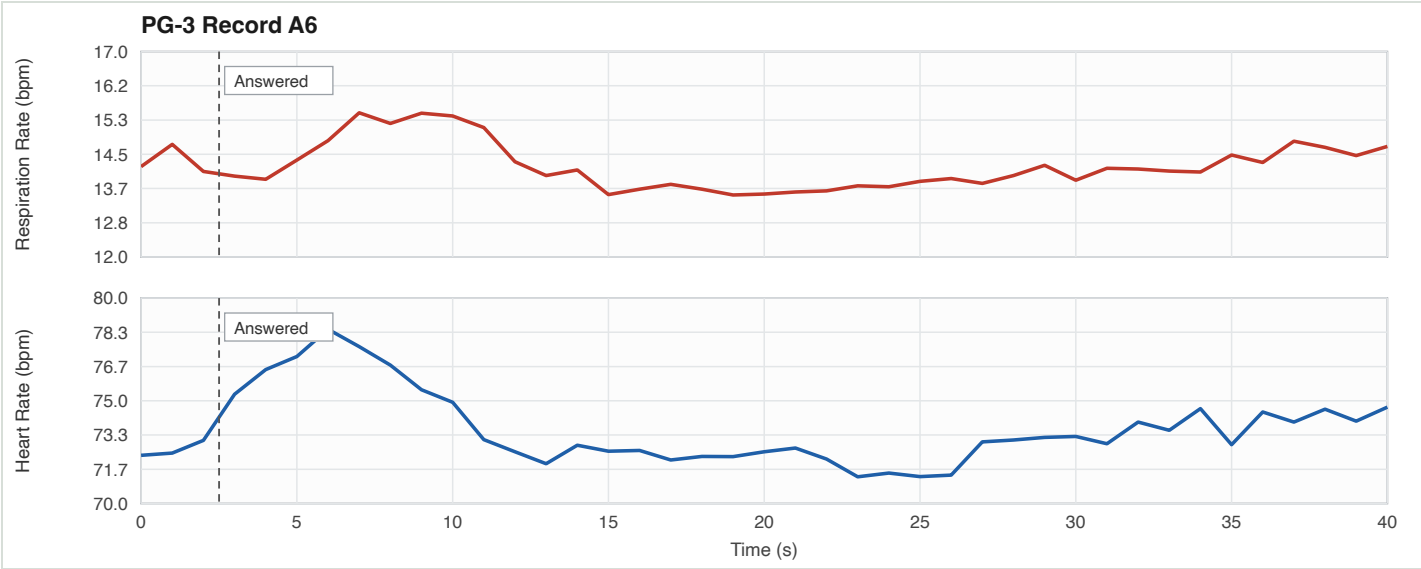


PG-3 Record A4



PG-3 Record A5





Record	Can it be measured? yes or no	What is wrong with it
A1		
A2		
A3		
A4		
A5		
A6		

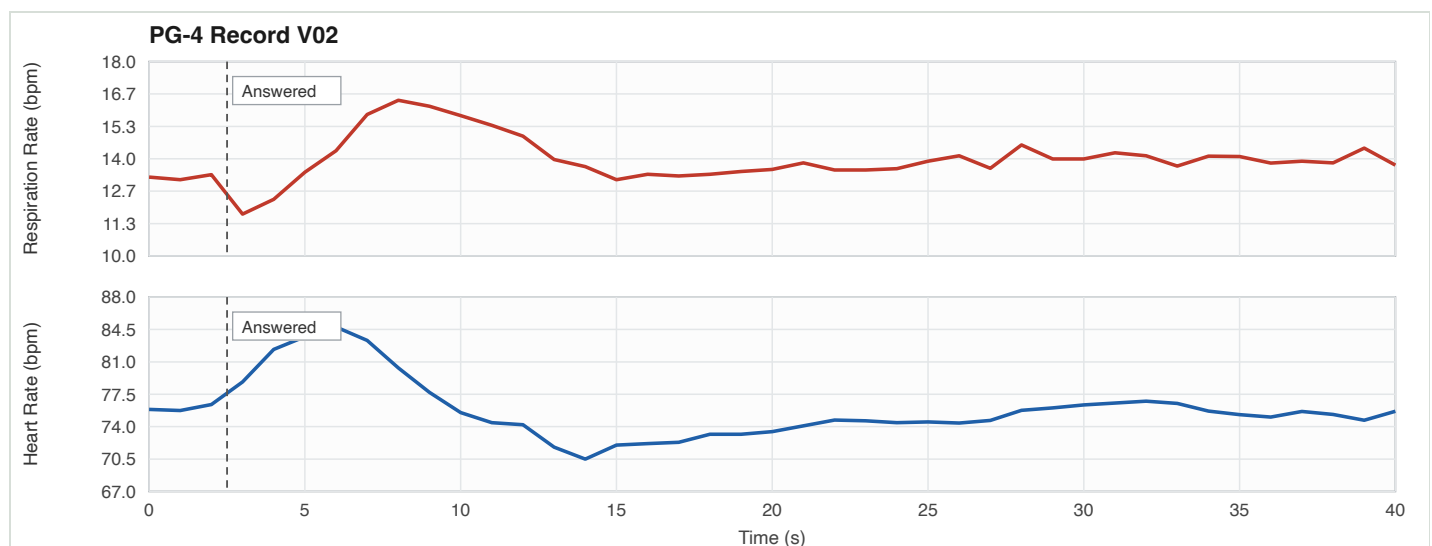
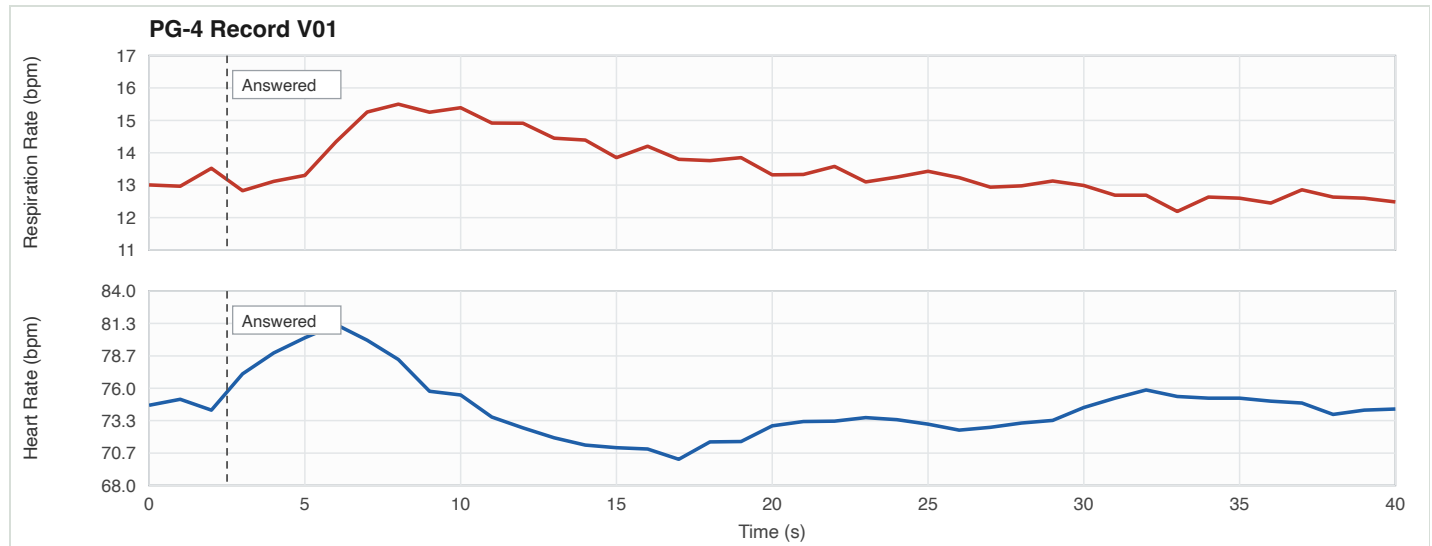
PG-4. Apply your rule to ten records

LOCK YOUR RULE BEFORE YOU LOOK

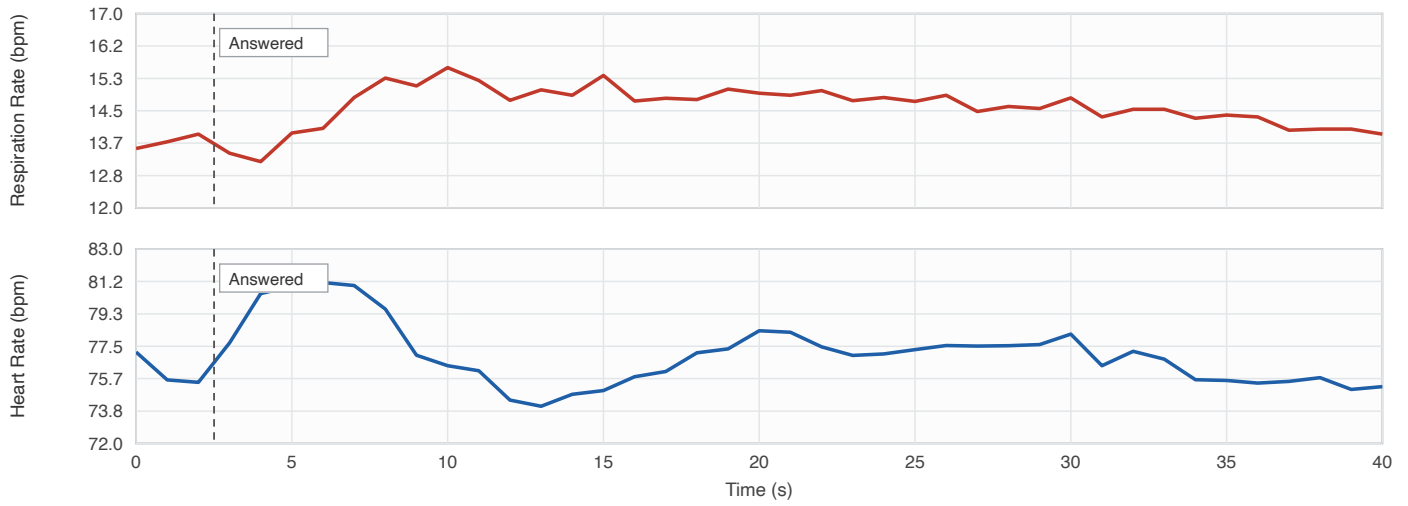
Write your decision rule now, before you open a single item. Once it is written you may not change it for this set. Changing a rule after seeing answers is how a test stops measuring anything.

What size heart rate change will you treat as a large response? Write the number in bpm now.

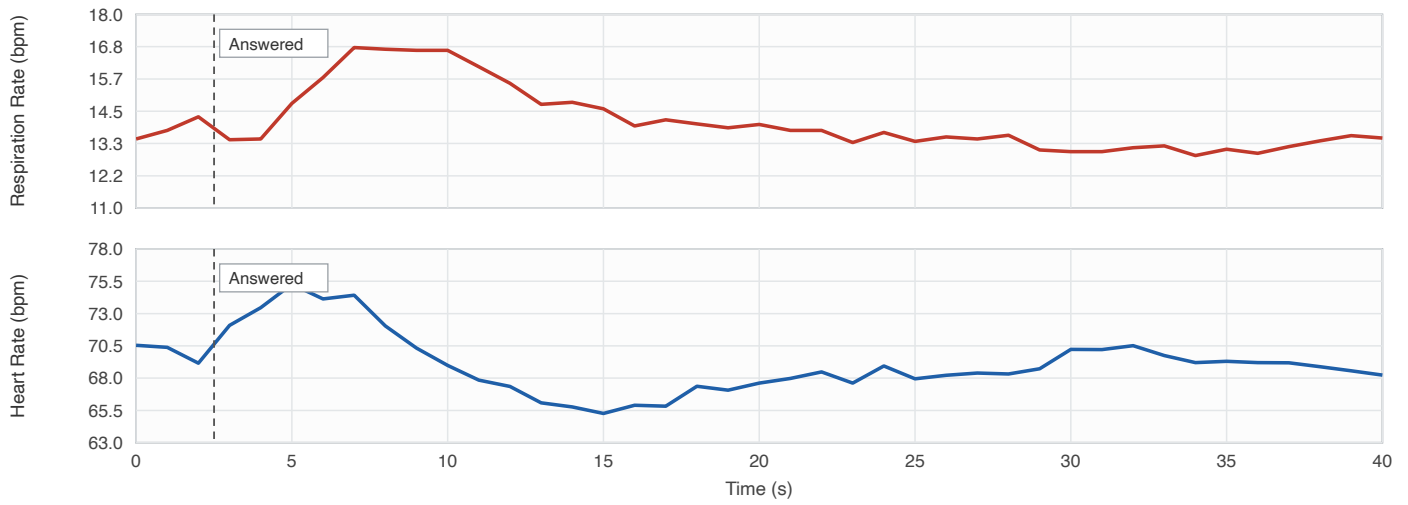
You are classifying a PHYSIOLOGICAL RESPONSE as large or small. You are not classifying a person as truthful or deceptive. Keep the wording exact.



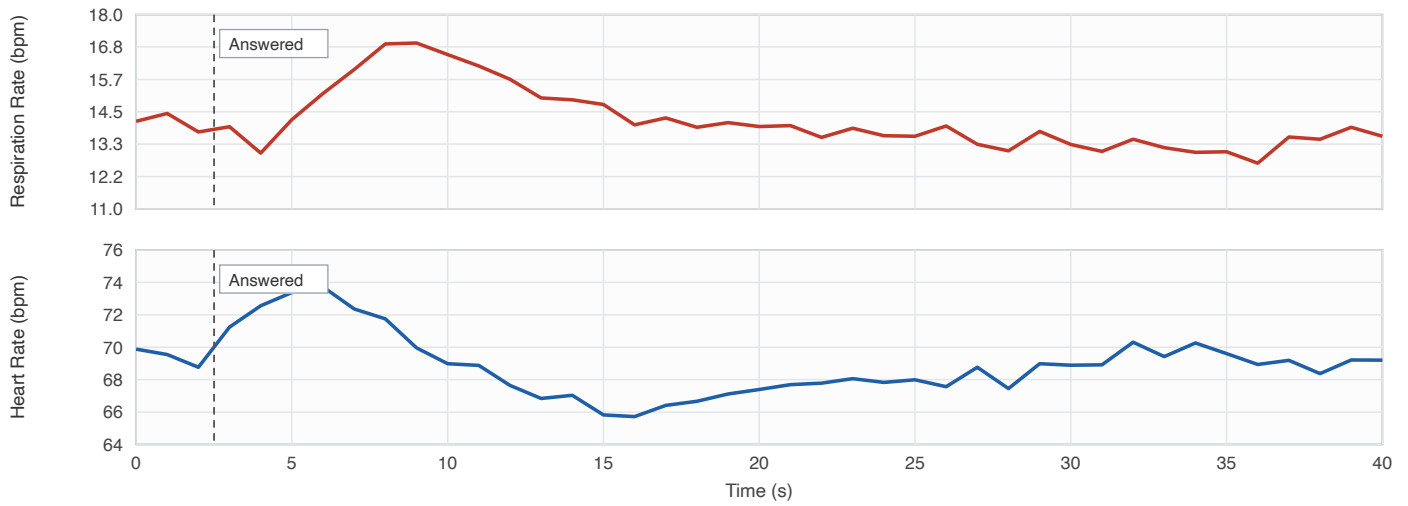
PG-4 Record V03



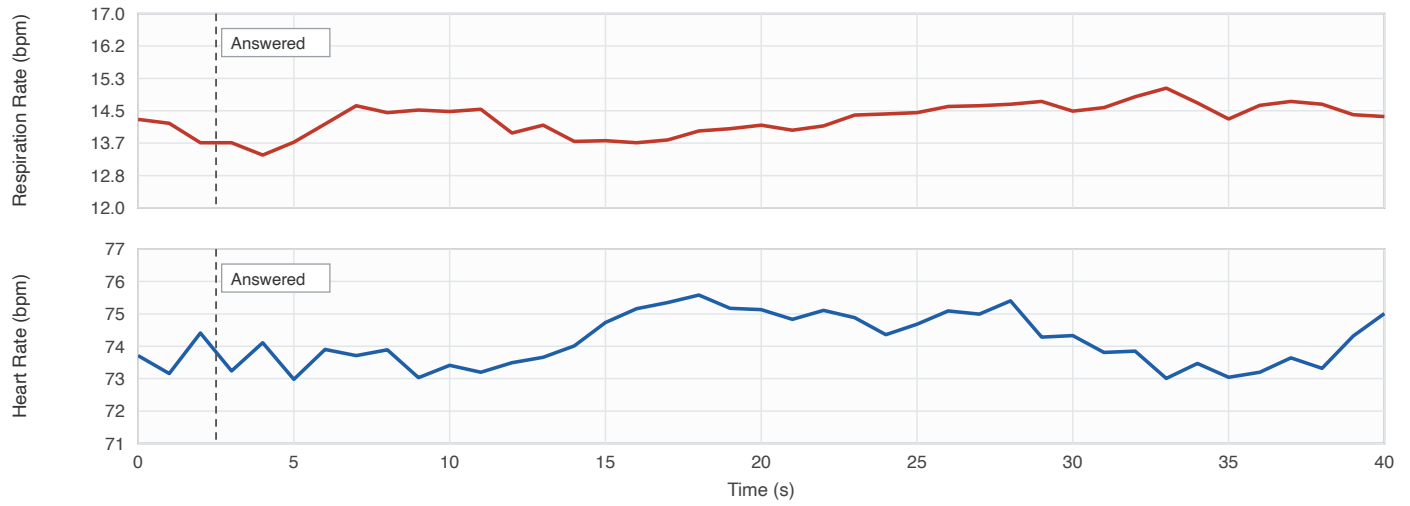
PG-4 Record V04



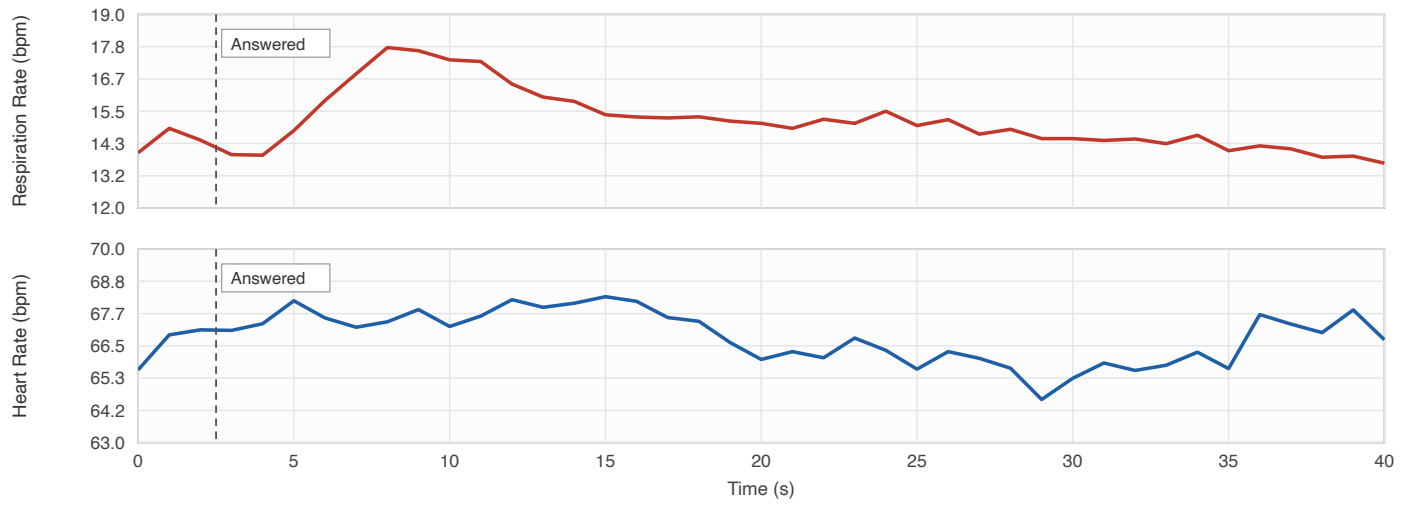
PG-4 Record V05



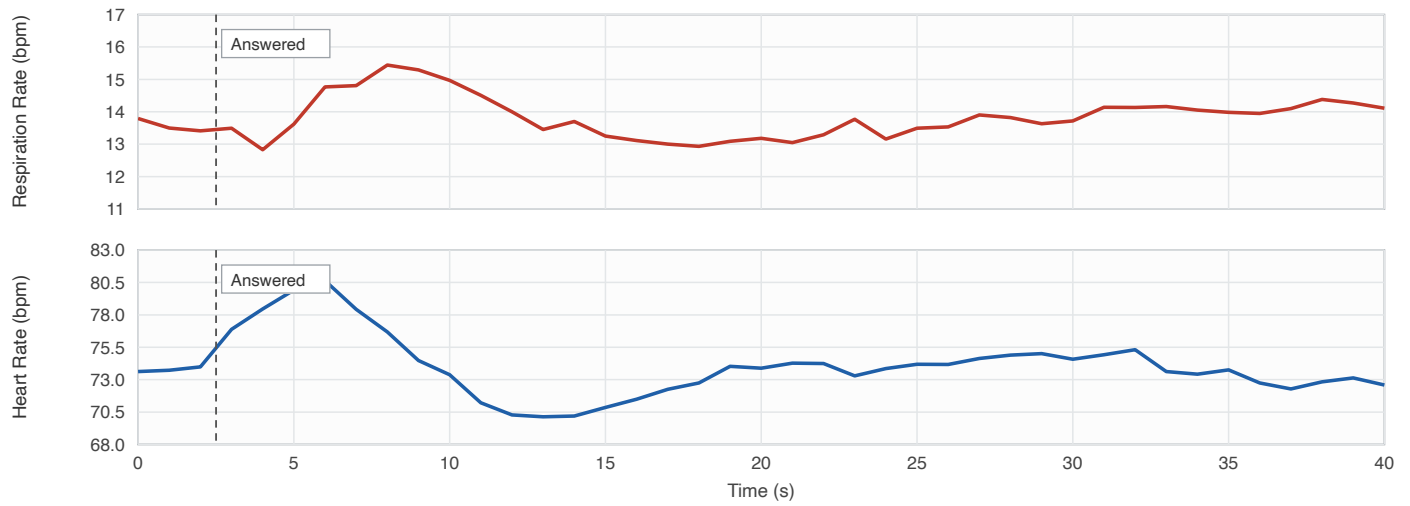
PG-4 Record V06



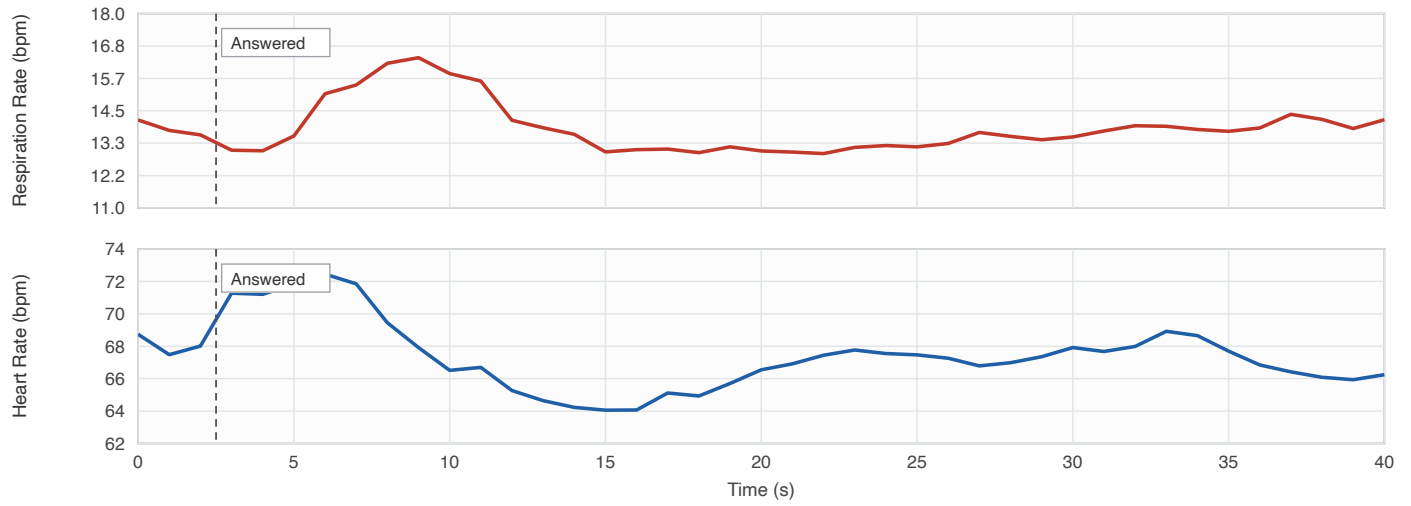
PG-4 Record V07



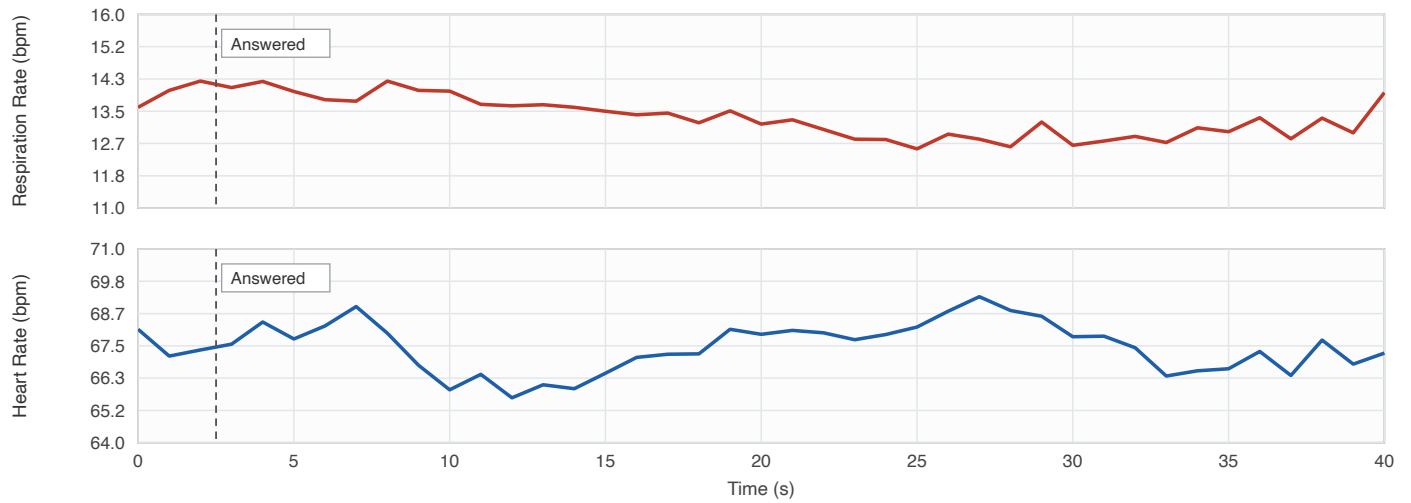
PG-4 Record V08



PG-4 Record V09



PG-4 Record V10



Your calls, then the reveal

Record	HR change you measured	Large or small by your rule	Scripted state (fill in after the reveal)
V01			
V02			
V03			
V04			
V05			
V06			
V07			
V08			
V09			
V10			

	Scripted deceptive	Scripted truthful
You called it large		
You called it small		

Now the honest question. How many truthful records did your rule flag as large? Those are people your rule would have accused. Write the number, then write what it would mean if this were a real investigation.