

Ch. 1 Homework

Phy 101
①

Ch. 1 Qs 5, 6
Probs 3c, d 4c, d

Questions

⑤ Basic Res.

- a. New galaxy
- d. study of parrot diet
- e. New chemical element

Applied Res

- b. better method for tire fab.
- c. breeding a new variety
- f. Improve gold extraction method

⑥

a) In the lab, you could make a chemical soup which was acidic and measure out different amounts (corresponding to different weights). Then add an antacid & see if it worked.

b) How long does it take to work? How long does it last?
Is it gentle on your stomach?
Are there any side effects?
How does it taste?
Does it matter what types of food you have eaten?

c) All could be studied experimentally but the taste question

Problems

③c. The maximum heart rate a person can attain is lower the older you are.
See graph

Prob (cont.)

3d. It takes 2.5 seconds to put 2 gallons of gas in your car, ~~or~~ or 1 gallon every 1.25 sec. See graph

4c. In order to determine the heart rate of an older or younger person, a line can be drawn through the data pts.

At 15 years old,	205 beats/min
90 years old,	130 " "

An alternative, is to determine the equation of the line from the slope & intercept. The Excel program can add a trendline

$$y = -x + 220$$

or Heart Beat = (-1) Age + 220

This can be calculated.

4d. Slope = $\frac{\Delta \text{time}}{\Delta \text{gallons}} = \frac{12.5 - 0}{10 - 0} = 1.25 \frac{\text{seconds}}{\text{gal}}$

intercept = 0

$$\text{Time} = (1.25) \text{ gallons} + 0$$

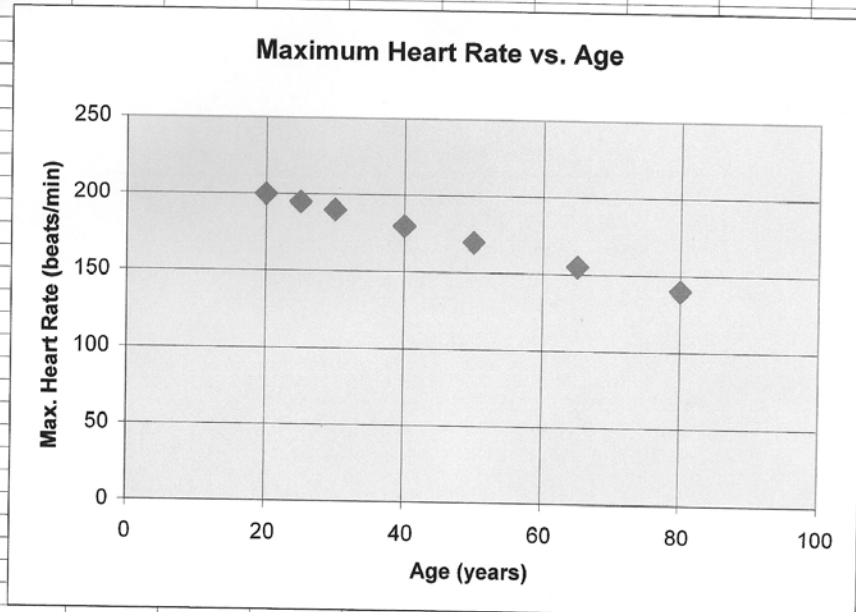
For 15 gallons,	Time = 18.75 seconds
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If you take the point off your graph, it might look like

15 gall,	19 seconds
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Phy 101 Ch. 1 Problem 3 C

Maximum Heart Rate beats/min	Age years
200	20
195	25
190	30
180	40
170	50
155	65
140	80

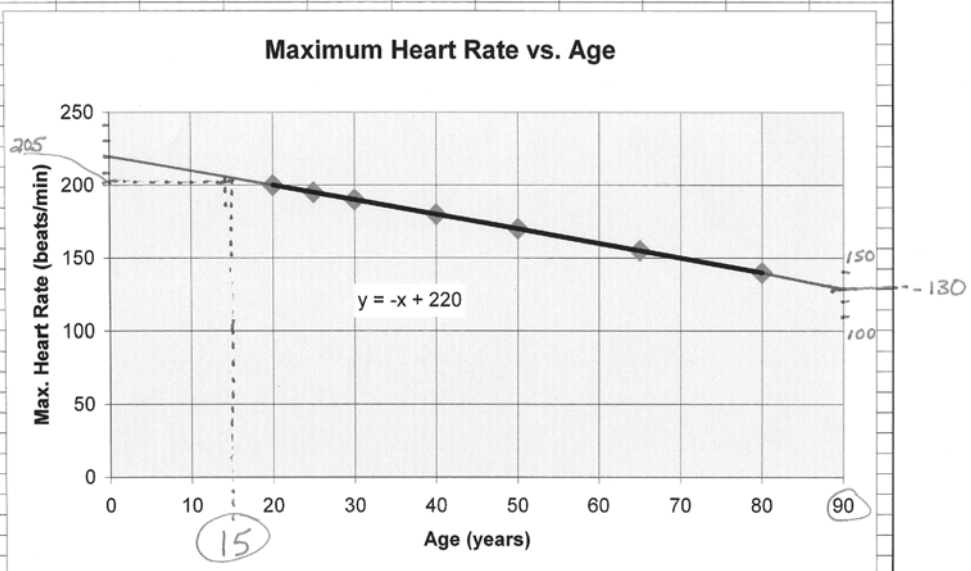


Phy 101 Ch. 1 Problem 4 C

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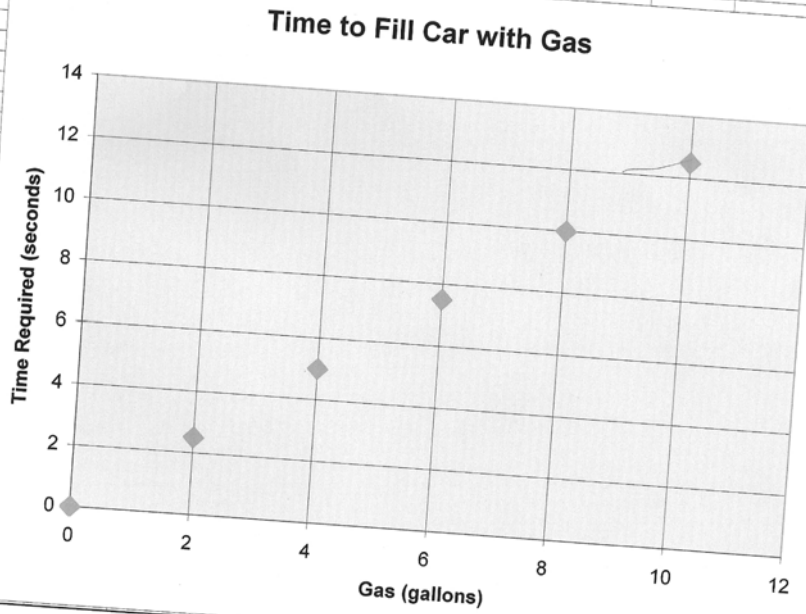
Use Trendline

Age	Heart Rate
15	205
90	130



Phy 101 CH 1 Prob 3 D

Volume of Gas Gallons	Time Required seconds
0	0
2	2.5
4	5
6	7.5
8	10
10	12.5



Phy 101 CH 1 Prob 4 D

Volume of Gas Gallons	Time Required seconds
0	0
2	2.5
4	5
6	7.5
8	10
10	12.5

SLOPE

$$m = \frac{\Delta(\text{time})}{\Delta(\text{gas})}$$

1.25

Calculated Blue Line Graph

Vol	Time
0	0
2	2.5
4	5
6	7.5
8	10
10	12.5
12	15
14	17.5
15	18.75
16	20

