7.3–7.4 Quiz

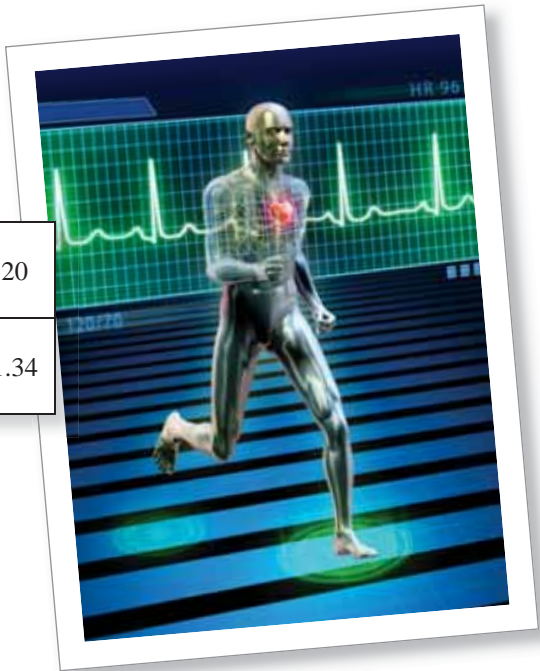**DATA** **Heart Rate Recovery** **In Exercises 1–3, use the information below.**

Heart rate recovery is the reduction in heart rate from the rate at peak exercise to the rate 1 minute after the exercise has stopped. It can be used as a predictor of mortality. Heart rate is measured in beats per minute (bpm). The table shows the relative risk of death for various heart rate recoveries.

Heart rate recovery (bpm)	6	8	10	12	14	16	18	20
Relative risk of death	6.38	5.18	4.14	3.26	2.54	1.98	1.58	1.34

1. Describe the pattern of relative risk of death.

2. Extend the pattern to find the relative risk of death when the heart rate recovery is 22 beats per minute.

3. Use a spreadsheet to graph the data. Describe the graph.

Golden Heartbeat **In Exercises 4–6, use the information below.**

The main components of an electrocardiogram (EKG) are the P wave, the electrical activity in the atria; the QRS complex, the electrical activity in the ventricles; and the T wave, the electrical recovery of the ventricles. The electrocardiograms of human heartbeats vary considerably depending on a variety of factors.
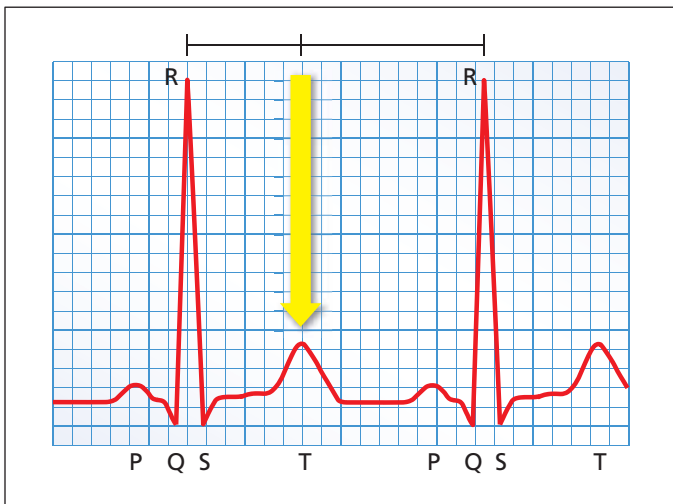
4. Some people believe that a peaceful heartbeat produces a rhythm related to the golden ratio. Use the EKG to describe how a peaceful heartbeat is related to the golden ratio.

DATA **5.** The table shows the approximate ratio of each successive pair of Fibonacci numbers. Graph the ratios. Identify any similarities to the EKG.

1	/	0	→	∞
1	/	1	=	1
2	/	1	=	2
3	/	2	=	1.5
5	/	3	=	1.667
8	/	5	=	1.6
13	/	8	=	1.625
21	/	13	=	1.615
34	/	21	=	1.619

6. Use the Internet to describe how blood pressure is related to the golden ratio.