

Midterm Exam

July 14, 1997

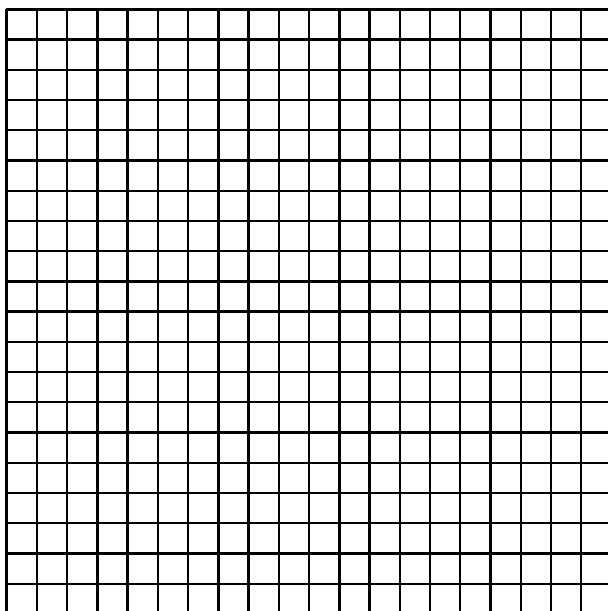
- There are six problems on this test. Be sure that you find all six.
- You have 50 minutes to work on this test.
- Please write your answers in the spaces provided after the problems. If you need more space you can continue an answer elsewhere but be sure to tell where that continuation is, and to mark the continuation as to what problem it goes with! (The space below here would be one place for scratch work or to continue an answer.)

Problem 1

On a test which had a maximum score of 100, the scores were distributed as follows:

- 20% of the students scored between 80 and 100, including both 80 and 100.
- 15% of the students scored between 70 and 80, including 70 but not 80.
- 25% of the students scored between 60 and 70, including 60 but not 70.
- 20% of the students scored between 50 and 60, including 50 but not 60.
- 0% of the students scored between 40 and 50, including 40 but not 50.
- 20% of the students scored between 0 and 40, including 0 but not 40.

In the area below, draw a histogram displaying these scores. Be sure to provide any needed labels.

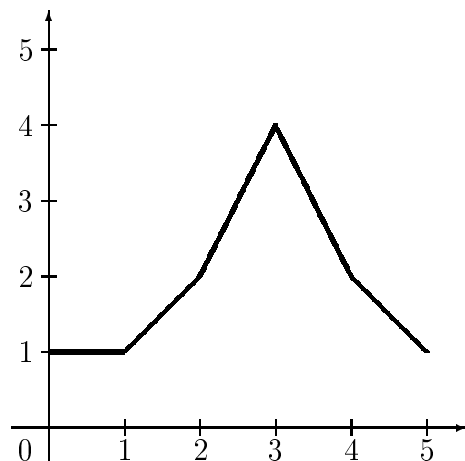


Problem 2

On a quiz the students scored 2, 3, 7, 8, 10, 3, 5, 8, and 8.

- (a) What was the mean score?
- (b) What was the median score?
- (c) What was the mode score?

Problem 3



From the graph above:

- (a) On the interval from 0 to 3, is the graph rising or falling and is it concave up or concave down?
- (b) On the interval from 2 to 4, is the graph rising or falling and is it concave up or concave down?
- (c) On the interval from 3 to 5, is the graph rising or falling and is it concave up or concave down?

Problem 4

If a graph goes through the points $(2, a)$, $(4, 0)$, and $(8, b)$ for some numbers a and b , what condition on a and b will insure that the graph is concave down in this region?

Problem 5

An insurance company says in an advertisement concerning retirement:

They say in thirty years a burger & fries could cost \$16, a vacation \$12,500, and a basic car \$65,500.

No problem. You'll eat in. You won't drive. And you won't go anywhere.

Granted, sitting around the house may not be your idea of the perfect retirement. But what's your choice when inflation is slowly but surely eroding the value of your nest egg?

Analyze this advertisement: What do you think it wants you to do? What do the data given really support, if anything? Is the ad misleading?

Problem 6

An Excel spreadsheet has the six numbers shown already entered:

	A	B	C	
1	1	2	3	
2	4	5	6	
3				
4				
5				

- (a) If we type $=2*C1$ in cell B3, what number will appear in this cell?
- (b) If we type $=B2+B3$ in cell C3, what number will appear in this cell?
- (c) After doing steps (a) and (b), we change cell C1 from 3 to 5: What will now appear in cells B3 and C3?