7. A graph of the fluctuations of the DOW has a vertical scale running from 5,000 up to 12,000. What principle of visual display is violated by this graph?

a) rectangular display elements principle
b) two for one principle
c) principle of parsimony
→ d) area principle

8. Ten cars fail a crash test and 20 cars pass the test. A bar graph for this information has height 10 above "fail." What is the height of the bar above "pass?"

a) 10 b) 5 c) 20 d) 25 e) 15

9. Determine the median of the list {6, 6, 3, 6, 7, 99, 120, 8}.

a) 6 b) 8 c) 7 d) 6.5 e) 31.875

ORDER $n = 8$

3 6 6 6 7 8 99 120

$\frac{6+7}{2} = 6.5$

10. A PROBABILITY histogram is prepared from counts of people's ages

class intervals of age	(0, 20],	(20, 40],	(40,50],	(50, 60],	(60, ∞)	
numbers of persons	20	25	5	30	20	total 100 persons

Give the height of the box (bar) above the class interval (50, 60].

a) 30/100 b) 3/100 c) 15/100 d) 30/10 e) 30

$W = 60 - 50 = 10$

$H = PR/W = (30/100)/10$

$= 3/100$

11. If sex is statistically unrelated to smoking (independent of smoking) what number of counts should appear in the blank cell of the table below?

	smoker	non-smoker
female	20	60
male	10	

30 PROPORTIONALITY

a) 60 b) 10 c) 20 d) 30 e) 5

20. Which among the following **exhibit importent aspects** of Simpson's "Paradox" as described in class and in your textbook in connection with the Berkeley graduate admissions data?

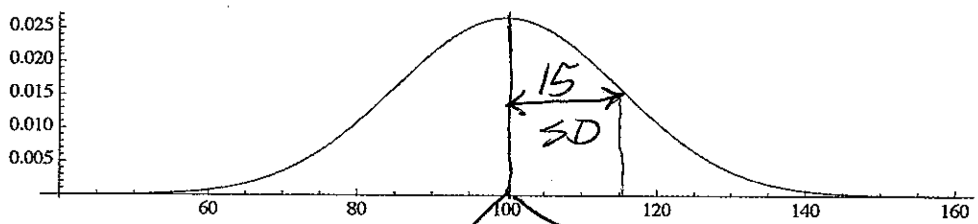
→ (20.1) Female applicants are admitted at a higher rate than male applicants to every division of a company and yet male applicants are admitted at a higher rate than female applicants for the company as a whole.
→ (20.2) Females apply in relatively greater numbers than do males to divisions that are harder for both sexes to get a job in.
X (20.3) Female applicants are admitted at a higher rate than male applicants to every division of a company and male applicants are admitted at a ~~higher~~ LOWER rate than female applicants for the company as a whole.

TYPOS (a) all b) only 23.1 c) only 23.3 d) only 22.2 and 23.3 e) only 22.1 and 22.2

(a) or (e) ← ANS CORRECT BUT (a) OK CAUSE OF TYPOS

21. A list has ***sample*** standard deviation **s** equal to 8. What will s be changed to if each number on the list is doubled and then each is increased by one (new list 2x + 1)?

a) 8 b) 10 c) 6 d) 17 e) 16



The sketch above is a normal probability density having mean 100 and standard deviation 15.

22. Determine the percentage of the population between the limits of 85 and 115 from the density above.

a) 50% b) 30% c) 68% d) 95% e) 80%

$\bar{x} \pm s$ ACCOUNTS FOR 68% OF A NORMAL POPULATION.