

Review Exam 2
goal: 25 1.35 pts
extra goal: 50 2.7 pts

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50 problems!!

- 1) a) Categorical
b) numerical, continuous
c) categorical
d) numerical, continuous
e) categorical
f) numerical, discrete

2) a

3) b, false

4) A, true

5) Left skew, a

6) c, right skew

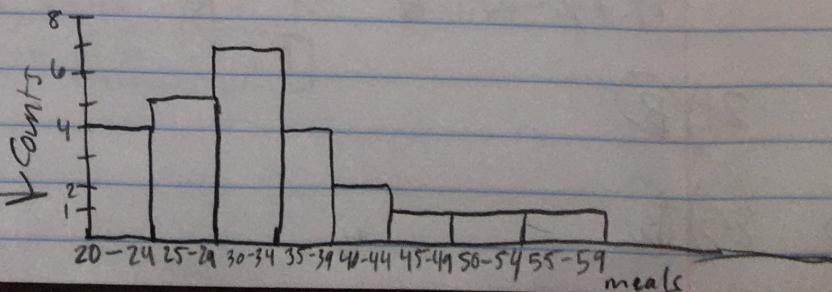
7) a, unimodal

8) b, bimodal

9) c

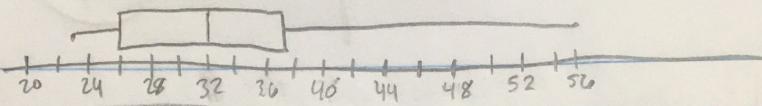
- 10) a) numerical, continuous
b) categorical
c) numerical, continuous
d) categorical
e) categorical
f) numerical, discrete

11)



Review 2 cont.

12)



13a) mean = 79.55

b) 45 70 76 77 81 95 95 99

14a) mean = 71.6

b) 8 45 70 76 $\frac{77+80}{2}$ 81 95 95 99
median = 78.5

c) mean

15a) $Z = \frac{27 - 20.8}{4.8} = 1.29$ $P(X > 27) = P(Z > 1.29) = .0985$

b) $1.28 = \frac{x - 20.8}{4.8}$, $x = 26.95$, so 27 points

16a) $P(X < 880) = P(Z < -0.7) = .2420$, 24th percentile

b) $1.645 = \frac{x - 1026}{209}$, $x = 1369.8$, at least 1370

c) $P(X < 1200) = P(Z < .83) = .7967$

17) Jeremy $Z = \frac{25 - 20.8}{4.8} = .875$ Wendy $Z = \frac{1350 - 1026}{209} = 1.55$

wendy, since $1.55 > .875$.

18a) 68% of people have an IQ between 85 and 115.

95% " " " 70 and 130.

99.7% " " " 55 and 145.

b) 68%, " " " 63 and 70 inches.

95%, " " " 59.5 and 73.5 inches.

99.7%, " " " 56 and 77 inches.

c) 68%, " " " 4.6 and 7.4 cm.

95%, " " " 7.2 and 8.8 cm.

99.7%, " " " 1.8 and 10.2 cm.

19

21) B

2

20

25) B

Review 2 cont'd

26) C

27) C

28) C

29) A it is less spread out.

25 30) A

33a) False

b) False

c) True

34a) True

b) False

c) False

35a) False

b) False

36a) False

b) False

c) true

d) False

36b) A.

37A

29 37A) normal, $n=25$, $\sigma=10$, $\bar{x}=150$, $z=1.645$

$$150 \pm 1.645 \left(\frac{10}{\sqrt{25}} \right) \rightarrow 150 \pm 3.27$$

b) C.

2a

2a) ~~total~~

Review 2 cont

38) ME: $n = \left(\frac{z^* \cdot \sigma}{m}\right)^2$ $n = \left(\frac{1.96 \cdot 601}{.0001}\right)^2 \Rightarrow n = 384116$ D

31) 39a) $z^* = 1.96$ $66.2 \pm 1.96 \left(\frac{4.1}{\sqrt{400}}\right) = (65.8, 66.6)$ C
b) A

40) $n = \left(\frac{z^* \sigma}{E}\right)^2$ $z^* = 1.645$ $n = \left(\frac{1.645 \cdot 30}{2}\right)^2 = 608.85$ n=609

51a) well $n < 30$, and the plot is not normal. we can't use any of the tests we have talked about.

34 52a) Null: ~~H0~~ mean # of chips in a cookie is 33.

Alt: mean # of chips in a cookie less than 33.

b) That if $H_0 = 33$, the probability of taking a sample and finding a $M \leq 24.83$ is 2.7×10^{-13} .

35 53a) statistical

b) iii

54) The probability of a Type I error is 5%.

55) D

38 56) P

58) D

59) B

61) B

92 62) A

42 total

Review 2 con

(63) B

(64) B

(65) D

46 (66) B

(67) A

(68) B

49 (69) D

50 (70) C