Chapter 2 (Measurement in Statistics) Exam, form A

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

For problems 1 and 2, identify the variables as either qualitative or quantitative.

			•	1						
	1)	The state in wh	ich people live.							
		A) Qualitative		B) Quantitative						
	2)	The size of you	r house.							
		A) Qualitative		B) Quantitative						
For pr	obl	ems 3 and 4,	identify the numb	er as either continu	ious or discrete.					
•	3)		=	tering college in a certai						
		A) Continuous		B) Discrete						
	4)	The number of	eggs in a goose nest is	8.						
		A) Continuous		B) Discrete						
	5)	Temperatures in	n degrees Fahrenheit of	f the ocean at various de	pths.					
		A) Ratio	B) Interval	C) Ordinal	D) Nominal					
	6)		s are given below. S te "Neither" or "Both"		which a ratio of the measurements is					
		1. Kasheta ran t	1. Kasheta ran the race in 22.3 sec, and Louisa ran the same race in 26.4 sec.							
		2. Juan gets out	Juan gets out of school at 2:45 PM, and Aito gets out of school at 3:15 PM.							
		A) Kasheta ra	in the race in 22.3 sec,	and Louisa ran the same	e race in 26.4 sec.					
		B) Neither								
		C) Both								
		D) Juan gets of	out of school at 2:45 Pl	M, and Aito gets out of s	school at 3:15 PM.					
	7)	Select the description that most completely classifies the given variable.								
		Soft drink sizes	: small, medium, large							
		A) Qualitative,		B) Quantitative	, ordinal					
		· -	, ordinal, discrete	D) Qualitative,						
	8)	-	reads 0.01 g when it is dom or systematic.		ential error in the measurements made or					
		A) Random		B) Systematic						
	9)		mined by rounding to		ntial error as random or systematic.					
		A) Random		B) Systematic						
	10)	of the student	The results of a poll are stated as follows: "Based on a survey of 156 randomly selected students, 90% of the student body of 2870 students agree that no student should have to take final exams in two consecutive exam periods." If 2578 students actually agree, then what is the absolute error in the reported result?							
		A) 5 students		B) 287 students	3					
		C) 0.17%		D) 292 students	3					
	11)		s radar indicates that y What is the relative er		niles per hour; you had the cruise contro					
		A) 5 mph	B) 7.1%	C) 7.7%	D) 0.929					

12)	Quality control randomly selects one of the parts, and four different quality-control technicians measure its length. Their measurements are 5.3234 cm, 5.11259 cm, 5.351 cm, and 5.45 cm. Which measurement is the most accurate?												
	A) 5.3	234 cm		B) 5.1	1259 cm		C) 5.351	cm	D)) 5.45 cn	1		
13)		red wit st divisi		ric scale	that ha	s grams	as the s	mallest o	division,	a scale	with mil	ligrams as	the
	A) w	ill guar	antee m	easurem	ents that	are mor	e accura	te, but n	ot neces	sarily mo	ore precis	e.	
	B) w	ill guar	antee m	easurem	ents that	are mor	re precise	and mo	re accur	ate.			
	C) w	ill guar	antee m	easurem	ents that	are mor	re precise	e, but no	t necessa	arily moi	e accurat	e.	
	D) w	ill not g	guarante	e measu	rements	that are	more acc	curate or	more pr	ecise.			
14)											ce of a rowho said	ésumé is v this?	ery
	A) 4	5 respoi	ndents.										
	B) 9	0 respoi	ndents.										
	C) 4	00 respo	ondents.										
	D) 4	50 respo	ondents.										
15)	Conve	rt $\frac{5}{16}$ to a	a percen	ıt.									
	A) 31.	25%		B) 0.3	125%		C) 3.125	%	D)	0.0312	5%		
16)	Conve	rt 0.45 t	o a perc	ent.									
	A) 45%	o		B) 0.00	045%		C) 4.5%		D)	0.45%			
17)	7) Humanities majors spend an average of \$115 per course on books. Mathematics majors spend an average of \$70 per course on books. What is the percent difference between the two amounts relative to the amount for mathematics majors (round to the nearest percent)?												
	A) 64%	o		B) 39%	6		C) -64%	D	D)) -39%			
18)		the bo										32. How muto the near	
	A) 61%	6		B) 158	3%		$C) -158^{\circ}$	%	D)	39%			
19)	Text I		umber,									the 'Statist 5 price as	
	A) 20.	0		B) 200	0.0		C) 50.0		D)	2.0			
20)	A part	of the C	Consum	er Price	Index (C	PI) is gi	ven belo	w:					
_	Year	1975	1980	1985	1990	1995	2000	2005	2010	2015			
	CPI	53.8	82.4	107.6	130.7	152.4	172.2	195.3	218.1	237.0			
	Suppos years 1		ek's gro	ceries in	1980 co	st \$70. \	What wo	uld these	e groceri	es cost,	to the nea	rest dollar,	10
	A) \$38	}		B) \$44			C) \$111		D)	\$129			

Chapter 2 (Measurement in Statistics) Exam, form B

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

For proble	ems 1 and 2, id	entify the variable	as either qualitat	ive or quantitative.							
1)	A person's height	in feet.									
	A) Qualitative		B) Quantitative								
2)	A person's politic	al affiliation.									
	A) Qualitative		B) Quantitative								
For proble	ems 3 and 4, id	entify the number	as either discrete	or continuous.							
3)	The number of bo	oks available from Am	azon.com is 227,362.								
	A) Discrete		B) Continuous								
4)	An athlete runs 10	00 meters in 10.7 second	ds.								
	A) Discrete		B) Continuous								
5)	,										
	Ages of survey respondents.										
	A) Ratio	B) Interval	C) Ordinal	D) Nominal							
6)	Two statements are given below. Select the statement for which a ratio of the measurements is meaningful. State "Neither" or "Both" if appropriate.										
	1. Kim pulled weeds at the rate of twenty weeds per minute, and Jorge pulled 18 weeds per minute.										
	2. Anna Lisa swam 45 yards underwater, and Marissa swam 35 yards underwater.										
	A) Anna Lisa swam 45 yards underwater, and Marissa swam 35 yards underwater.										
	B) Kim pulled v	veeds at the rate of twe	nty weeds per minute, a	and Jorge pulled 18 weeds per minute.							
	C) Neither										
	D) Both										
7)	Select the description that most completely classifies the given variable.										
	_		•	importance to you a 5 and that of least importance a 1"							
	A) Qualitative, or		B) Quantitative, of								
	C) Quantitative, o		D) Qualitative, no								
8)	A computer uses error.	voice recognition softw	rare. Identify a misinter	rpreted word as a systematic or random							
	A) Systematic		B) Random								
9)	Identify the potential error in recording arrival times for interstate highway trips as random or systematic.										
	A) Systematic		B) Random								
10)	The size of an e-n error?	nail file is stated as 210	kB, but the file size is	actually 220.5 kB. What is the absolute							
	A) 5%	B) 10%	C) 10.5 kB	D) -10.5 kB							
11)	The pickup time of is the relative error	_	e is set at 5 rings, but the	ne machine picks up after 4 rings. What							
	A) –1 ring	B) 4 to 6 rings	C) -25%	D) -20%							
12)	The approximate the most precise?	value of π is 3.1415927	7. Which of the followi	ng experimentally determined values is							
	A) 3.14	B) 3.247	C) 3.412114	D) 3.3245							

13)									ius (e.g.	25.5 seconds), a stopwatch that		
	gives readings as seconds (e.g. 23.54 seconds) is A) more accurate, but not necessarily more precise.											
	B) more precise and more accurate.											
	C) not necessarily more precise or more accurate.											
	D) more precise, but not necessarily more accurate.											
14)	4) In a survey of 500 human resource professionals, 80% said that the appearance of a resume is very important for a good first impression. What is the actual number of respondents who said this?											
	A) 45 respondents											
	B) 8	30 respo	ndents									
	C) 4	00 resp	ondents									
	D) 4	50 resp	ondents									
15)	Conve	ert 13%	to decin	nal form.								
	A) 0.0)13		B) 0.13	3		C) 1.3		D)	13		
16)	Conve	ert 5.65	to a perc	ent.								
	A) 56	5%		B) 5.6	5%		C) 0.565	%	D)) 56.5%		
17)					_				_	rettes and 61% of 7th graders in crease, to the nearest percent?		
	A) 77	%		B) 336	5%		C) 436%			D) 47%		
18)							•			9% of persons 60–65 years old group, to the nearest point?		
	A) 76	points		B) 319	points		C) –46 p	oints	D)) 46 points		
19)	Text 1		number,							in 2016. What is the 'Statistics ion with the 2016 price as the		
	A) 0.	6		B) 163	3.6		C) 1.6		D)	61.1		
20)	A part	of the (Consum	er Price	Index (C	PI) table	e is giver	below:				
	Year	1975	1980	1985	1990	1995	2000	2005	2010	2015		
_	CPI	53.8	82.4	107.6	130.7	152.4	172.2	195.3	218.1	237.0		
			-	-			995. Wha		the sala	ry have to have been in 1975 if		
	A) \$2	244,000		B) \$30	,000		C) \$58,0	000	D)	\$128,000		

Chapter 2 (Measurement in Statistics) Exam, form C

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

For problems 1 and 2, identify the variable as either quantitative or qualitative.

1)	Branc	d of basketball sho	oes worn by a team.							
	A) Q	uantitative		B) Qualitative						
2)	Outco	ome of tossing a c	oin.							
	A) Q	uantitative		B) Qualitative						
For probl	ems 3	3 and 4, identi	fy the number as o	either continuous	or discrete.					
3)	The a 32.3 1		ears passing a busy inte	ersection between 4:30	P.M. and 6:30 P.M. on a Friday is					
	A) Co	ontinuous		B) Discrete						
4)	The t	otal number of sca	am emails you receive	in a month is 7.						
	A) Co	ontinuous		B) Discrete						
5)	Deter	mine which of the	e four levels of measure	ement is most appropri	ate.					
	Politi	cal party preferen	ce of survey responden	its.						
	A) N	ominal	B) Ordinal	C) Interval	D) Ratio					
6)			given below. Select the "Neither" or "Both" if		h a ratio of the measurements is					
		e fertilized grass week.	grew 2.9 inches in a v	week; the unfertilized	grass grew 1.8 inches in the same					
	2. Th	e single-stage mo	del rocket went up 287	ft; the two-stage mode	el rocket went up 412 ft.					
	A) 7	The single-stage m	nodel rocket went up 28	37 ft; the two-stage mo	del rocket went up 412 ft.					
		The fertilized gras week.	s grew 2.9 inches in a v	week; the unfertilized g	grass grew 1.8 inches in the same					
	C) 1	Neither								
	D) I	Both								
7)	Selec	t the description t	hat most completely cla	assifies the given varia	ble.					
	Number of wins by the NFL teams in the NFC Central division									
	A) Q	uantitative, nomin	nal	B) Quantitative, interval						
	C) Q	ualitative, interval		D) Quantitative, ratio						
8)	cook				ked in quarters. Assuming that the nee potential measurement error as					
	A) Sy	stematic		B) Random						
9)	A per	son is always late	for class. Identify the	potential error as rando	om or systematic.					
	A) Sy	ystematic		B) Random						
10)			o scoops of coffee recoper pot. What is the relationship		nufacturer, a coffee aficionado uses					
	A) –	50%	B) $-33\frac{1}{3}\%$	C) 50%	D) $33\frac{1}{3}\%$					
11)	A pha	armacist puts 32 p	ills into a prescription	order that calls for 30 p	pills. What is the absolute error?					
	A) –	6.7%	B) –2 pills	C) 2 pills	D) 6.7%					

12)	12) The approximate value of π is 3.1415927. Which of the following experimentally determined values is the most accurate?											
	A) 3.14				B) 3.3245			C) 3.412114				
13)	Which	of the	followin	g statem	ents is c	orrect?						
	A) "Precise measurement" means the same thing as "accurate measurement."											
	B) An accurate measurement must be precise.											
	C) A precise measurement must be accurate.											
	D) A	precise	e measu	rement is	s not nec	essarily	accurate					
14)	14) In a survey of 500 human resource professionals, 70% said that the appearance of a resume is very important for a good first impression. What is the actual number of respondents who said this?											
	A) 3	5 respon	ndents									
	B) 7	0 respon	ndents									
	C) 3	50 resp	ondents									
	D) 4	00 resp	ondents									
15)	Conve	rt 1779	% to dec	cimal for	m.							
	A) 17	7.9		B) 17.	79		C) 1.779	ı	D)	177,900)	
16)	16) Convert 0.0195% to decimal form.											
	A) 0.0	000195		B) 1.93	5		C) 0.195		D)	19.5		
17)	17) A professor's checking account balance a year ago was \$1470. Currently, it is \$1040. Calculate the relative percentage change to the nearest percentage point.											
	A) –4	1%		B) 29%	6		C) 41%		D)) -29%		
18)											ersons 60–65 years on the nearest percent?	old
	A) -4	8%		B) 76%	6		C) 310%)	D)) 48%		
19)	Text I		umber,								What is the 'Statisti the 1995 price as t	
	A) 15	0		B) 66.	7		C) 100.0)	D) 50		
20)	A part	of the O	Consum	er Price	Index (C	PI) table	is giver	below:				
	Year	1975	1980	1985	1990	1995	2000	2005	2010	2015		
-	CPI	53.8	82.4	107.6	130.7	152.4	172.2	195.3	218.1	237.0		
		is the pe t integer		icrease o	f a mark	et baske	t of goo	ds from	1975 to	1985? R	ound the percent to t	he
	A) 10	0%		B) 200	%		C) 54%) 50%		

Chapter 2 (Measurement in Statistics) Exam, form D

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

For problems 1 and 2, identify the variable as either quantitative or qualitative.

	1)	A player's number on her soccer jersey								
		A) Quantitative B)	Qualitative							
	2)	The number of textbooks owned by a student								
		A) Quantitative B)	Qualitative							
For p	robl	lems 3 and 4, identify the number as eith	er continuous or discrete.							
-	3)	The number of Direct TV customers								
		A) Continuous B)	Discrete							
	4)	The voltage of the electricity in a power line								
		A) Continuous B)	Discrete							
	5)	Determine which of the four levels of measureme	nt is most appropriate.							
		A librarian rates fives books on an "ease of readir	ng" scale from 1 (easy) to 10 (hard).							
		A) Nominal B) Ordinal C)	Interval D) Ratio							
	6)	Two statements are given below. Select the simeaningful. State "Neither" or "Both" if appropri	tatement for which a ratio of the measurements is ate.							
		1. Jan earned a B on her test and Bob earned a C.								
		2. Bob wears size 9 shoes and Earl wears size 13.								
		A) Jan earned a B on her test and Bob earned a G	C.							
		B) Bob wears size 9 shoes and Earl wears size 1	3.							
		C) Neither								
		D) Both								
	7)	Select the description that most completely classic	fies the given variable.							
		A Prostate Specific Antigen (PSA) test is useful in detecting prostate cancer in men. A sample of blood is analyzed and the concentration of PSA is reported in nanograms per milliliter. Values less than 4.0 are considered normal and values over 10.0 indicate that further tests are needed. The best classification of the PSA variable is								
		A) Nominal B)	Qualitative, Ordinal							
		C) Quantitative, Continuous D)	Quantitative, Discrete							
	8)	Amtrak passenger trains are often late in arriving arrival time as systematic or random.	g at their destinations. Identify the potential error in							
		A) Systematic B)	Random							
	9)		ses. The jelly maker estimates the 4 pounds of grapes at the grapes. The scale only shows the weight to the systematic or random.							
		· ·	Random							
	10)) The grape jelly maker in the previous problem at the 4 pounds called for by the recipe. What is the	ctually uses 3 pounds, 12 ounces of grapes instead of relative error? (There are 16 ounces in a pound.)							
		A) 4 ounces B) –4 ounces C) 6.25%	(a) D) -6.25%							
	11)	A golfer estimates that the distance to the hole fexactly 212 yards. What is the relative error?	For his next shot is 200 yards. The actual distance is							
		A) -12 yards B) -6.0% C)	6.0% D) -5.7%							

12)	12) Avogadro's number is the number of molecules of a substance in a quantity of the substance me in grams equal to its atomic weight. It can only be determined by chemistry or physics experime is named after Amadeo Avogadro, who postulated in 1811 that this number was the same substances. Various values for this constant have been determined experimentally. Some of the 6.02 x 10 ²³ , 6.022 x 10 ²³ , and 6.02214199 x 10 ²³ . The 10 ²³ means that you have to move the depoint 23 places to the right. Which of these values is the most accurate?									riments. It ame for all of them are		
	A) 6.02 x	•	_	3) 6.022				199 x 10		D) We	can't tell	
13)	/	d to a so	cale that	/								our weight
	A) more			ore accui	rate.							
	B) less	-				te.						
	C) more		•									
		•		•								
14)	D) less precise and less accurate. In a survey of 500 human resource professionals, 60% said that the appearance of a resume is very important for a good first impression. What is the actual number of respondents who said this?											
	A) 30 re	esponde	nts									
	B) 60 re	esponde	nts									
	C) 300 i	respond	ents									
	D) 360 i	respond	ents									
15)	Convert	112.463	% to de	cimal for	rm.							
	A) 1.124	63	E	3) 11.246	63	C)	1124.63		D) 1	1246.3		
16)	Convert ().1963 t	o a perc	ent.								
	A) 0.001	963%	E	3) 0.0196	63%	C)	1.963%		D) 19	9.63%		
17)	After a ye						hanged	from 17	2 pounds	s to 185	pounds.	What is his
	A) 13.0 p	ounds	E	8) 8.0%		C)	7.6%		D) 7.	.0%		
18)	Wisconsi	n, was	\$3.89	while in	Appleto	on, Wiso	consin,	the aver	age pric	e was \$	3.74. W	Eau Claire, What is the price in Eau
	A) -3.9%	0	Е	3) 3.9%		C)	-4.0%		D) 4.	.0%		
19)												tistics Text e reference
	A) 0.6		Е	3) 5.9		C)	59.2		D) 1	68.9		
20)	A part of	the Cor	nsumer I	Price Ind	ex (CPI)	table is	given be	elow:				
ĺ	•											
	Year	1975	1980	1985	1990	1995	2000	2005	2010	2015		
	CPI	53.8	82.4	107.6	130.7	152.4	172.2	195.3	218.1	237.0		
	CFI	33.0	02.4	107.0	130.7	132.4	1/2.2	193.3	210.1	237.0		
	keep up v	vith infl	ation (ro	ounded t	o the nea	arest \$10	00)?			•	ave to be	in 2005 to
	A) \$125,	000	E	3) \$69,00	00	C)	\$116,00	0	D) \$.	35,000		