

MATH 1001
Practice Final Exam

All work must be shown to receive full credit. Submitting the correct answer is only worth one point. All answers must be in simplest form.

Only a standalone calculator can be used. Please put up all other electronics.

Name: _____

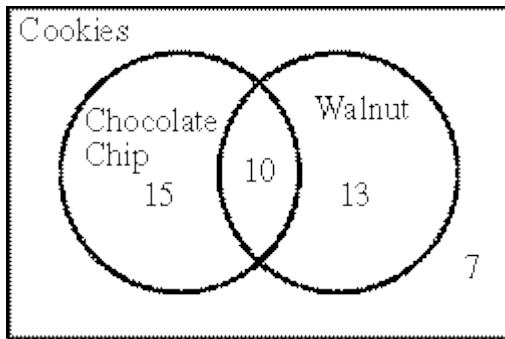
MULTIPLE CHOICE.

Use braces to write the members of the set, or state that the set has no members.

- 1) The positive-integer powers of 3
 A) {3, 6, 9, 12, 15, ...} B) {1, 8, 27, 64, 125, ...}
 C) {3, 9, 27, 81, 243, ...} D) {1, 3, 9, 27, 81, 243, ...}

Solve the problem.

- 2) The following Venn diagram describes the types of cookies in a bakery. Use it to determine how many cookies have neither chocolate chips nor walnuts.



- A) 3 B) 7 C) 17 D) 10

Write the negation of the proposition.

- 3) No fifth graders play soccer.
 A) All fifth graders play soccer. B) Not all fifth graders play soccer.
 C) No fifth grader does not play soccer. D) At least one fifth grader plays soccer.

Make a truth table for the given statement. The letters p, q, r, s represent propositions.

- 4) r and not s

A)	B)	C)	D)																																																												
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Determine whether the statement is true or false.

- 5) If horses have six legs, then Benjamin Franklin was the first president of the United States.
 A) True B) False

Decide whether the argument is inductive or deductive.

- 6) The last four answers were false. Therefore, the next one will be false.
A) Deductive B) Inductive

Find the indicated probability. Round your answer to 6 decimal places when necessary.

- 7) A die with 6 sides is rolled. What is the probability of rolling a number less than 5?
A) 4 B) $\frac{1}{6}$ C) $\frac{5}{6}$ D) $\frac{2}{3}$

Determine whether the events A and B are independent.

- 8) A balanced die is rolled twice.
Event A: The sum of the two rolls is 8
Event B: The first roll comes up 3
A) Yes B) No

Find the indicated probability. Round your answer to 6 decimal places when necessary.

- 9) You are dealt two cards successively (without replacement) from a shuffled deck of 52 playing cards. Find the probability that the first card is a king and the second card is a queen.

- A) $\frac{13}{102}$ B) $\frac{2}{13}$ C) $\frac{1}{663}$ D) $\frac{4}{663}$

- 10) Of the 81 people who answered "yes" to a question, 11 were male. Of the 84 people who answered "no" to the question, 13 were male. If one person is selected at random from the group, what is the probability that the person answered "yes" or was male?

- A) 0.636 B) 0.145 C) 0.57 D) 0.136

Evaluate the factorial expression.

- 11) $\frac{6!}{4! 2!}$
A) 1 B) 120 C) 6 D) 15

Solve the problem.

- 12) In a certain lottery, 6 different numbers between 1 and 12 inclusive are drawn. These are the winning numbers. How many different selections are possible? Assume that the order in which the numbers are drawn is unimportant.

- A) 924 B) 720 C) 2,985,984 D) 665,280

Use the 68–95–99.7 rule to solve the problem.

- 13) Scores on a test are normally distributed with a mean of 105 and a standard deviation of 18. What percentage of scores are greater than 141?

- A) 97.5% B) 5% C) 2.5% D) 95%

Identify which of these types of sampling is used: simple random, stratified, systematic, or convenience.

- 14) A market researcher selects 500 people from each of 10 cities.

- A) Stratified B) Convenience C) Systematic D) Simple random

Solve the problem.

15) For the study described below, identify the population.

A manufacturer of light bulbs wants to determine the average lifetime of its 75-watt light bulbs. Among 120 randomly selected 75-watt light bulbs, the average lifetime was 1007 hours.

- A) All 75-watt light bulbs manufactured by the company
- B) All 75-watt light bulbs
- C) The average lifetime of all 75-watt light bulbs manufactured by the company
- D) The 120 randomly selected 75-watt light bulbs

Identify the variable as either qualitative or quantitative.

16) The eye color of women playing softball.

- A) Qualitative
- B) Quantitative

Find the range for the given data.

17) The amount that Jeremy has saved in each of the last six months is shown below.

\$117 \$530 \$167 \$612 \$414 \$299

- A) \$530
- B) \$495
- C) \$117
- D) \$132

Find the mode(s) for the given sample data.

18) 20, 39, 46, 39, 49, 39, 49

- A) 49
- B) 46
- C) 39
- D) 40.1

Prorate the given expenses to find the monthly cost.

19) Keiko pays \$350 per month for food, a semiannual health insurance premium of \$1700, and an annual car insurance premium of \$700. Round your answer to the nearest dollar.

- A) \$692
- B) \$371
- C) \$750
- D) \$550

Calculate the amount of interest you'll have at the end of the indicated period.

20) You invest \$10,000 in an account that pays simple interest of 3% for 7 years.

- A) \$300.00
- B) \$1009.92
- C) \$1621.81
- D) \$2100.00

Calculate the amount of interest you'll have at the end of the indicated period.

21) You invest \$13,000 in an account that pays simple interest of 2% for 17 years.

- A) \$1003.02
- B) \$2391.89
- C) \$260.00
- D) \$4420.00

Solve.

22) Calculate the monthly payment for a home mortgage of \$88,000 with a fixed APR of 3.7% for 15 years.

- A) \$637.78
- B) \$271.73
- C) \$6012.42
- D) \$767.84

Write an equation for the linear function and use it to answer the given question.

23) You can purchase a motorcycle for \$9090 or lease it for a down payment of \$610 and \$237 per month. Find an equation that describes how the cost of the lease depends on time. How long can you lease the motorcycle before you've paid more than its purchase price.

- A) $L = 610 + 237m$; 40 months
- B) $L = 610 - 237m$; 35 months
- C) $L = 610 + 237m$; 35 months
- D) $L = 610 - 237m$; 40 months

Provide an appropriate response.

24) The population of a town with an initial population of 56,644 grows at a rate of 2.6% per year. Create an exponential function of the form $Q = Q_0 \times (1 + r)^t$.

A) $Q = 56,644 \times (0.974)^t$

B) $Q = 56,644 \times (3.6)^t$

C) $Q = 56,644 \times (1.026)^t$

D) $Q = 56,644 \times (0.948)^t$

Evaluate the validity of the chain of conditionals.

25) Premise: If I pay my bills on time, then my credit will be good.

Premise: If my credit is good, then I will become a movie star.

Conclusion: If I pay my bills on time, then I will become a movie star.

A) Invalid

B) Valid

Rephrase the statement as a conditional proposition with the form "if p, then q."

26) Attending practice is necessary for staying on the team.

A) If you don't attend practice, then you must stay on the team.

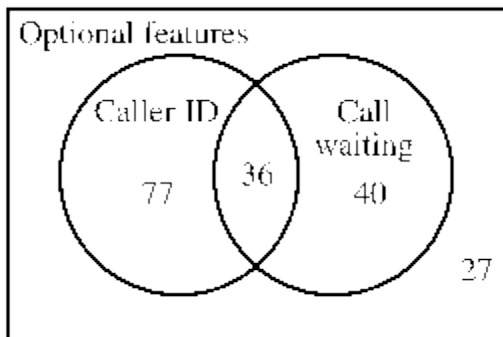
B) If you stay on the team, then you must attend practice.

C) If you don't stay on the team, then you must not attend practice.

D) If you attend practice, then you must stay on the team.

Solve the problem.

27) The following Venn diagram describes the optional features ordered by new telephone customers in a certain region. Use it to determine how many customers ordered call waiting.



A) 76

B) 36

C) 40

D) 77

Decide whether the argument is inductive or deductive.

28) Every coach must know his sport well. Steve Spurrier is a football coach, so Steve Spurrier knows football well.

A) Inductive

B) Deductive

Solve the problem.

29) For the study described below, identify the population parameter.

A bank manager wants to know the average amount of time customers of his bank have to wait in line. 300 customers were polled and asked their average wait time at the bank. 27 of the 300 people were extremely dissatisfied with the amount of time they had had to wait in line in recent months.

A) All customers of the bank

B) The average wait time for the 300 customers polled.

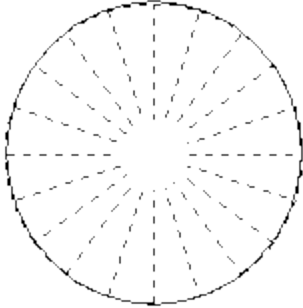
C) The percentage of dissatisfied customers.

D) The average wait time for all the bank's customers.

Construct a pie chart representing the given data set.

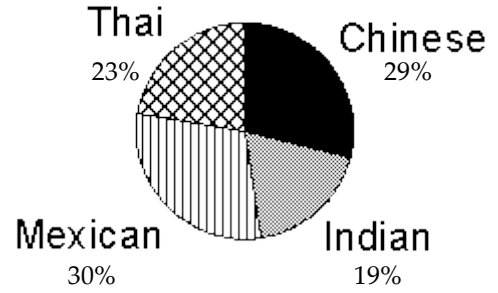
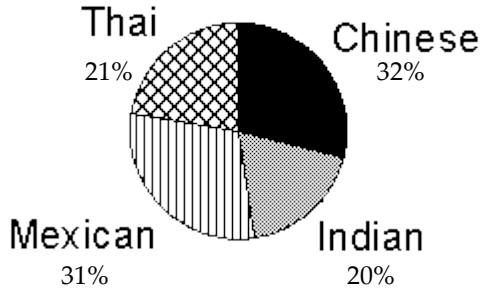
30)

Favorite Food	Number of Responses
Chinese	230
Indian	150
Mexican	240
Thai	180



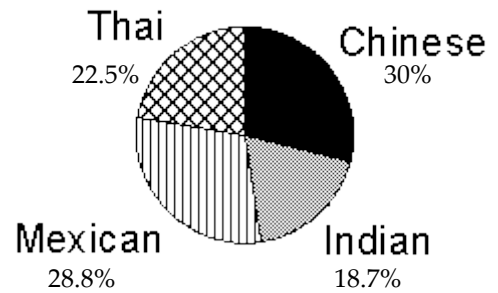
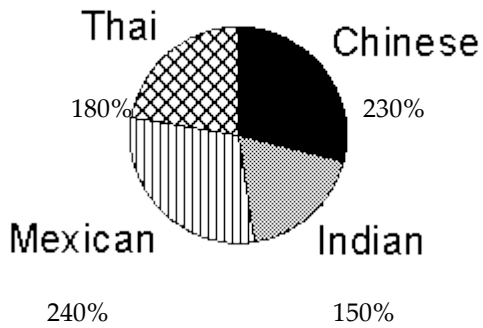
A)

B)



C)

D)



Find the median for the given sample data.

31) A new business had the following monthly net gains:

\$6257 \$1876 \$3887 \$7058 \$7761
 \$3519 \$2520 \$8438 \$4662 \$4765

Find the median net gain.

A) \$5638.11

B) \$4662.00

C) \$4713.50

D) \$5074.30

Obtain the five-number summary for the given data.

32) The weekly salaries (in dollars) of sixteen government workers are listed below.

690 606 813 639
728 584 481 630
537 665 685 466
561 787 509 826

A) 466, 543.00, 630, 718.5, 826
C) 466, 537, 630, 690, 826

B) 466, 543.00, 634.5, 718.5, 826
D) 466, 549.0, 634.5, 709, 826

33) A restaurant offers three course meals with 3 types of salads, 7 different main courses, and 6 different desserts. How many different three course meals could be ordered?

A) 126 B) 16 C) 60 D) 63

Find the indicated probability. Round your answer to 6 decimal places when necessary.

34) Among the contestants in a competition are 41 women and 27 men. If 5 winners are randomly selected, what is the probability that they are all men?

A) 0.00774 B) 0.07968 C) 0.12385 D) 0.10773

Write an equation for the linear function and use it to answer the given question.

35) Normaltown High School's pool record for the 100-yard freestyle was 47.3 in 1990. Assume that the record falls at a constant rate of 0.04 second per year. What does the model predict for the record in 2009?

A) $R = 47.3t - 0.04$; 898.66 seconds B) $R = 47.3 - 0.04t$; 46.54 seconds
C) $R = 47.3t + 0.04$; 898.74 seconds D) $R = 47.3 + 0.04t$; 48.06 seconds

Answer Key

Testname: MATH 1001 FINAL PRACTICE-DN

- 1) C
- 2) B
- 3) D
- 4) C
- 5) A
- 6) B
- 7) D
- 8) B
- 9) D
- 10) C
- 11) D
- 12) A
- 13) C
- 14) A
- 15) A
- 16) A
- 17) B
- 18) C
- 19) A
- 20) D
- 21) D
- 22) A
- 23) C
- 24) C
- 25) B
- 26) B
- 27) A
- 28) B
- 29) D
- 30) B
- 31) C
- 32) D
- 33) A
- 34) A
- 35) B