Show your work for problems 6, [19,25]. Credit will be given for complete correct answers only. (No partial credit).

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

The argument given or described involves some kind of fallacy. Identify the fallacy.

1) If Proposition Q fails, your children won't have good schools.
   - A) Appeal to emotion
   - B) Appeal to ignorance
   - C) Hasty generalization
   - D) Diversion (red herring)

2) A television commercial shows two people who fall in love while wearing a certain brand of blue jeans.
   - A) Appeal to ignorance
   - B) Appeal to emotion
   - C) Hasty generalization
   - D) Limited choice

Determine whether the statement is a proposition.

3) \(2 + 9 = 12\)
   - A) Proposition
   - B) Not a proposition

4) Do you like this color?
   - A) Proposition
   - B) Not a proposition

Write the negation of the proposition.

5) Not all people like football.
   - A) Some people like football.
   - B) Some people do not like football.
   - C) All people do not like football.
   - D) All people like football.

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

6) \(q \text{ and (not } r) \text{ and } s\)
   - A)
   - B)
   - C)
   - D)
Describe how you would structure a key word search to find the information described.

7) Articles that mention either wars or natural disasters (or both) that involved Belgium
   A) (wars AND natural disasters) AND Belgium
   B) (wars AND natural disasters) OR Belgium
   C) (wars OR natural disasters) AND Belgium
   D) (wars OR natural disasters) OR Belgium

TRUE/FALSE. Write 'T' if the statement is true and 'F' if the statement is false.

Determine whether the statement is true or false.

8) If a triangle is a parallelogram, then all rectangles are squares.

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

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

9) All chocolate is good.
   A) If it isn’t good, then it’s chocolate.  
   B) If it’s good, then it’s chocolate.
   C) If it isn’t chocolate, then it isn’t good.
   D) If it’s chocolate, then it’s good.

Write the converse, inverse, or contrapositive off the proposition, as indicated.

10) If you received a refund of over $1000, then you cannot make a claim. (inverse)
    A) If you can make a claim, then you did not receive a refund of over $1000.
    B) If you did not receive a refund of over $1000, then you can make a claim.
    C) If you cannot make a claim, then you did not receive a refund of over $1000.
    D) If you can make a claim, then you received a refund of over $1000.

11) If the sum of the interior angles of a geometric figure is 180 degrees, then the figure is a triangle. (contrapositive)
    A) If a geometric figure is not a triangle, then the sum of the interior angles is 180 degrees.
    B) If a geometric figure is a triangle, then the sum of the interior angles is 180 degrees.
    C) If a geometric figure is not a triangle, then the sum of the interior angles is not 180 degrees.
    D) If the sum of the interior angles of a geometric figure is not 180 degrees, then the figure is not a triangle.

Two statements are listed in which p, q, and r represent propositions. Are the two statements logically equivalent?

12) not (p and q); (not p) or q
    A) Yes
    B) No

Consider the sets natural numbers, whole numbers, integers, rational numbers, and real numbers. Identify from the list the simplest set that describes the number given.

13) -6
    A) Natural numbers
    B) Whole numbers
    C) Rational numbers
    D) Integers

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

14) The whole numbers greater than 4 and less than 8
    A) {5, 6, 7}
    B) {5, 6, 7, 8}
    C) {4, 5, 6, 7}
    D) {4, 5, 6, 7, 8}
Solve the problem.

15) The following Venn diagram describes the desserts people ordered at a party. Use it to determine how many people ordered cake.

![Venn diagram]

A) 43, B) 7, C) 28, D) 21

Decide whether the argument is inductive or deductive.

16) Fresh fruit is expensive in winter. This is January, so these fresh strawberries will be expensive.

A) Inductive, B) Deductive

Evaluate the validity of the chain of conditionals.

17) Premise: If you loved me, then you would buy me a new car.
Premise: If you wanted me to be happy, then you would buy me a new car.
Conclusion: If you loved me, then you would want me to be happy.

A) Invalid, B) Valid

Identify the units you would expect for the given quantity.

18) A speed found by dividing a distance measured in meters by a time measured in seconds.

A) seconds per meter, B) square meters, C) meter-seconds, D) meters per second

Carry out the indicated unit conversion. Round your answer, if appropriate.

19) Convert a distance of 36 feet into yards.

A) 12 yards, B) 15 yards, C) 24 yards, D) 108 yards

Use the following table of exchange rates to solve the problem.

<table>
<thead>
<tr>
<th>Currency</th>
<th>Dollars per Foreign</th>
<th>Foreign per Dollar</th>
</tr>
</thead>
<tbody>
<tr>
<td>British pound</td>
<td>1.678</td>
<td>0.5958</td>
</tr>
<tr>
<td>Canadian dollar</td>
<td>0.7483</td>
<td>1.336</td>
</tr>
<tr>
<td>European euro</td>
<td>1.169</td>
<td>0.8554</td>
</tr>
<tr>
<td>Japanese yen</td>
<td>0.008482</td>
<td>117.9</td>
</tr>
<tr>
<td>Mexican peso</td>
<td>0.0943</td>
<td>10.6045</td>
</tr>
</tbody>
</table>

Round your answer, if appropriate.

20) Which is worth most, 1 British pound, 1 Canadian dollar, 1 European euro, or 1 dollar?

A) 1 British pound, B) 1 Canadian dollar, C) 1 dollar, D) 1 European euro
Calculate the amount of interest you'll have at the end of the indicated period.

21) You invest $200 in an account that pays simple interest of 4% for 6 years.
A) $8.33  
B) $4.80  
C) $133.33  
D) $48.00

Use the compound interest formula to determine the accumulated balance after the stated period. Assume that interest is compounded annually.

22) $1340 is invested at an APR of 11% for 18 years.
A) $3845.80  
B) $3789.42  
C) $3768.36  
D) $3993.20

Use the compound interest formula for compounding more than once a year to determine the accumulated balance after the stated period.

23) $1300 deposit at an APR of 6% with quarterly compounding for 5 years
A) $1690.00  
B) $1400.47  
C) $1750.91  
D) $1739.69

Find the annual percentage yield (APY).

24) A bank offers an APR of 2.3% compounded daily.
A) 2.39%  
B) 2.33%  
C) 4.60%  
D) 102.33%

Answer the question.

25) You want to have a $80,000 college fund in 15 years. How much will you have to deposit now in an account with an APR of 6% with monthly compounding?
A) $31,920.49  
B) $29,894.03  
C) $32,598.59  
D) $34,567.93