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

Determine whether the statement is a proposition.

1) Not all flowers are roses.
   A) Proposition
   B) Not a proposition
   1) A

2) One inch is 2.54 meters.
   A) Not a proposition
   B) Proposition
   2) B

Write the negation of the proposition.

3) Some people don’t like walking.
   A) Nobody likes walking.
   B) Some people don’t like driving.
   C) Some people like walking.
   3) D

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

4) r and not s
   A) r
   B) s
   C) r
   D) s
   4) C

5) if q, then not r
   A) q
   B) r
   C) q
   D) r
   5) B
Describe how you would structure a key word search to find the information described.

6) Articles about tornadoes in Idaho
   A) tornado OR Idaho
   B) tornado AND Idaho
   C) tornado AND Idaho AND articles
   D) tornado OR Idaho OR articles

Determine whether the statement is true or false.

7) If Florida is in the United States, then all rectangles are squares.
   A) True
   B) False

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

8) Attending practice is necessary for staying on the team.
   A) If you stay on the team, then you must attend practice.
   B) If you don't stay on the team, then you must not attend practice.
   C) If you attend practice, then you must stay on the team.
   D) If you don't attend practice, then you must stay on the team.

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

9) If I pass, then I'll celebrate. (contrapositive)
   A) If I celebrate, then I'll pass.
   B) If I don't celebrate, then I didn't pass.
   C) If I don't pass, then I won't celebrate.
   D) If I pass, then I won't celebrate.

Solve the problem.

10) 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.

   ![Venn Diagram](image)

   A) 77
   B) 40
   C) 36
   D) 76

Decide whether the argument is inductive or deductive.

11) The last four mayors were Democrats. Therefore, the next one will be a Democrat.
   A) Inductive
   B) Deductive
Write as a common fraction.
12) 0.648
   A) $\frac{81}{125}$  B) $\frac{81}{125}$  C) $\frac{162}{25}$  D) $\frac{324}{5}$

Solve the problem.
13) A swimming pool 2 meters deep, 15 meters long, and 6 meters wide is filled with water. What is the area of the water's surface?
   (A) 90 m²  B) 12 m²  C) 180 m³  D) 30 m²

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.
14) A fresh juice stand in Montreal sells a large glass of orange juice for 4.10 Canadian dollars. If you buy 4 glasses, how much have you spent in (U.S.) dollars?
   (A) $12.27  B) $21.91  C) $19.17  D) $14.03

Calculate the amount of interest you'll have at the end of the indicated period.
15) You invest $1000 in an account that pays simple interest of 8% for 3 years.
   A) $24.00  B) $240.00  C) $2666.67  D) $41.67

\[ I = \frac{PRT}{100} = \frac{1000 \times 0.08 \times 3}{100} = $240.00 \]

Use the compound interest formula for compounding more than once a year to determine the accumulated balance after the stated period.
16) $10,000 deposit at an APR of 3% with semiannual compounding for 5 years
   A) $10,772.84  B) $11,500.00  C) $11,605.41  D) $11,592.74

\[ A = P \left(1 + \frac{r}{n}\right)^{nt} = 10,000 \left(1 + \frac{0.03}{2}\right)^{(5 \times 2)} = 38,11605.41 \]
Solve the problem.

17) Suppose you start saving today for a $12,000 down payment that you plan to make on a condo in 8 years. Assume that you make no deposits into the account after your initial deposit. The account has daily compounding and an APR of 8%. How much would you need to deposit now to reach your $12,000 goal in 8 years?

A) $6892.43  
B) $5964.94  
C) $6327.95  
D) $5893.49

\[ A = P \left(1 + \frac{R}{n}\right)^{nt} \]
\[ n = 365 \]
\[ A = \frac{P}{\left(1 + \frac{R}{n}\right)^{nt}} = \frac{12000}{\left(1 + \frac{0.08}{365}\right)^{(365 \times 8)}} = \$6327.95 \]

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

18) Each of my brother's three dogs has fleas. Therefore, all dogs have fleas.

A) Hasty generalization  
B) Straw man  
C) False cause  
D) Circular reasoning

Evaluate the validity of the chain of conditionals.

19) Premise: If the moon is made of cheese, then what goes up must come down.
Premise: If what goes up must come down, then most Americans like apple pie.
Conclusion: If the moon is made of cheese, then most Americans like apple pie.

A) Invalid  
B) Valid