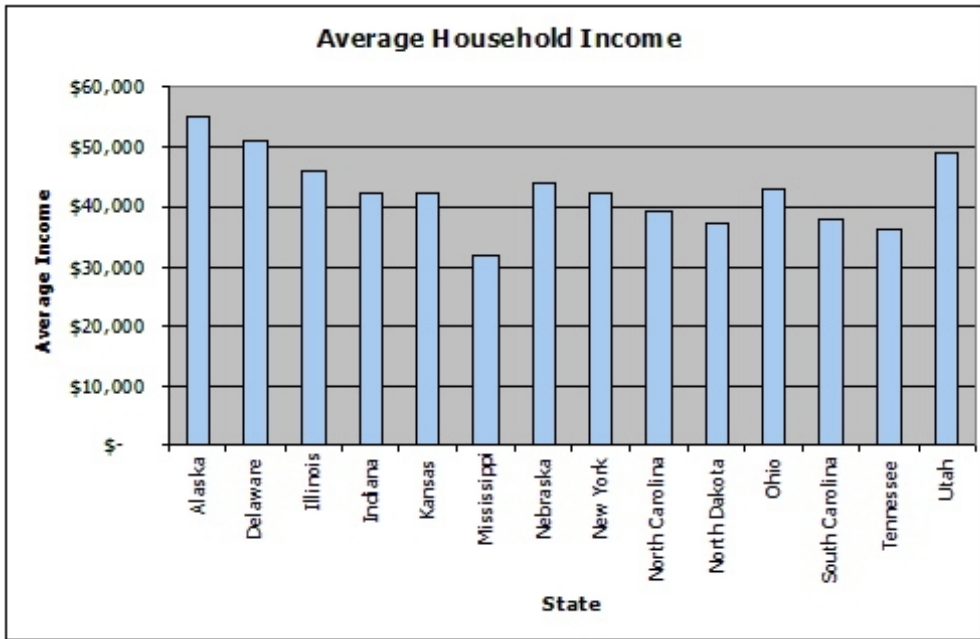


Exam

Name \_\_\_\_\_

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 1) For a specific year, the average household income for selected states is shown here. Estimate the average household income for North Carolina. 1) \_\_\_\_\_



Answer: \$39,000

Explanation:

- 2) Estimate the total cost of the following meal at a sub shop. 2) \_\_\_\_\_

- sandwich \$4.89
- chips \$1.24
- soda \$0.99

Answer: approximately \$7

Explanation:

- 3) Use inductive reasoning to find a pattern, and then make a reasonable conjecture for the next number in the sequence. 3) \_\_\_\_\_

5 10 20 40 80 \_\_\_\_\_

Answer: 160

Explanation:

4) Use inductive reasoning to conjecture the rule that relates the number you selected to the final answer. Try to prove your conjecture using deductive reasoning.

4) \_\_\_\_\_

Select a number:  
Multiply by 8:  
Subtract 24 from the answer:  
Divide by 8:  
Subtract the original number:

Answer: Final answer is always -3.

Select a number:  $x$   
Multiply by 8:  $8x$   
Subtract 24 from the answer:  $8x - 24$   
Divide by 8:  $\frac{8x - 24}{8} = x - 3$   
Subtract the original number:  $x - 3 - x = -3$

Explanation:

5) Round to the nearest hundred-thousand.  
98,521,900

5) \_\_\_\_\_

Answer: 98,500,000  
Explanation:

6) Bob and Sue are celebrating their 5th wedding anniversary. Estimate the total cost of their evening based on the prices below:

6) \_\_\_\_\_

theater \$59.52  
dinner \$58.79  
drinks \$12.78  
taxi \$13.50

Answer: approximately \$146  
Explanation:

7) The peak rate of a phone company is 22¢ per minute, and the off-peak rate is 12¢ per minute. Find the savings for a 44-minute phone call if it was made during off-peak time as opposed to peak time.

7) \_\_\_\_\_

Answer: \$4.40  
Explanation:

8) An item that originally cost \$887.99 is on sale for 20% off. Estimate the sale price of the item. 8) \_\_\_\_\_

Answer: \$712-\$720

Explanation:

9) Estimate the cost to live in an apartment for 1 year if the rent is \$319 per month and utilities are \$62 per month. 9) \_\_\_\_\_

Answer: approximately \$4560

Explanation:

10) Use inductive reasoning to find a pattern, and then make a reasonable conjecture for the next number in the sequence. 10) \_\_\_\_\_

7 8 10 13 17 22 28 \_\_\_\_\_

Answer: 35

Explanation:

11) One number is 18 more than another number. The sum of the numbers is 36. Find the numbers. 11) \_\_\_\_\_

Answer: 9 and 27

Explanation:

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

12) Round to the nearest hundredth. 12) \_\_\_\_\_

2.87491

A) 2.87000

B) 2.87400

C) 2.88000

D) 2.87500

Answer: A

Explanation: A)  
B)  
C)  
D)

- 13) Use inductive reasoning to find a pattern for the answers. Then use the pattern to guess the result of the final calculation, and perform the operation to see if your answer is correct. 13) \_\_\_\_\_

$$12,345,679 \times 9 = 111,111,111$$

$$12,345,679 \times 18 = 222,222,222$$

$$12,345,679 \times 27 = 333,333,333$$

.

.

.

$$12,345,679 \times 36 = ?$$

A) 333,333,333

B) 555,555,555

C) 444,444,444

D) 444,444,408

Answer: C

Explanation: A)

B)

C)

D)

- 14) Use inductive reasoning to find a pattern for the answers. Then use the pattern to guess the result of the final calculation, and perform the operation to see if your answer is correct. 14) \_\_\_\_\_

$$0^2 + 1 = 1$$

$$1^2 + 3 = 2^2$$

$$2^2 + 5 = 3^2$$

$$3^2 + 7 = 4^2$$

$$4^2 + 9 = 5^2$$

.

.

.

$$11^2 + 23 = ?$$

A) 133

B) 143

C)  $12^2$

D)  $13^2$

Answer: C

Explanation: A)

B)

C)

D)

15) Use deductive reasoning to arrive at a conclusion.

15) \_\_\_\_\_

On Christmas Day, Korean restaurants and gardens are always open, so this Christmas Day we can

- A) watch football and open gifts.
- B) eat Mexican food and take a walk in a park.
- C) eat Korean food and take a walk in a park.
- D) eat fast food and take a walk in a park.

Answer: C

Explanation: A)  
B)  
C)  
D)

16) Use inductive reasoning to find a pattern, and then make a reasonable conjecture for the next number in the sequence.

16) \_\_\_\_\_

1 3 7 13 15 19 25 27 31 37

- A) 45
- B) 41
- C) 39
- D) 43

Answer: C

Explanation: A)  
B)  
C)  
D)

17) Use inductive reasoning to find a pattern, and then make a reasonable conjecture for the next number in the sequence.

17) \_\_\_\_\_

6 7 3 4 0 1 -3 -2

- A) -3
- B) 2
- C) -6
- D) -1

Answer: C

Explanation: A)  
B)  
C)  
D)

18) Use inductive reasoning to make a conjecture about a rule that relates the original number to the final answer. Try to prove your conjecture using deductive reasoning. 18) \_\_\_\_\_

Select a number.

Add 80.

Multiply by 7.

Subtract 560.

Divide by 7.

Subtract the original number.

- A) The answer is always 0.
- B) The answer is always -480.
- C) The answer is always the original number.
- D) The answer is always 480.

Answer: A

Explanation: A)  
B)  
C)  
D)

19) A car travels 485 miles on 11.9 gallons of gasoline. How many miles per gallon did the car get? (Round to the nearest tenth.) 19) \_\_\_\_\_

- A) 24.5 miles per gallon
- B) 43.2 miles per gallon
- C) 35.3 miles per gallon
- D) 40.8 miles per gallon

Answer: D

Explanation: A)  
B)  
C)  
D)

20) The manager of an Internet cafe is having new counters custom-made. She wants to put 4 PCs on each counter with 4 feet between the PCs and 3 feet on each end. The PCs measure 18 inches wide and 24 inches high. What length of counters should the Internet cafe have made? 20) \_\_\_\_\_

- A) 26 ft
- B) 24 ft
- C) 25 ft
- D) 28 ft

Answer: B

Explanation: A)  
B)  
C)  
D)

21) A person's monthly budget includes \$226 for food, \$172 for gasoline, and \$193 for utilities. If the person earns \$2037 per month, how much money is left for other expenses? 21) \_\_\_\_\_

- A) \$1639                      B) \$1672                      C) \$1446                      D) \$723

Answer: C

Explanation: A)  
B)  
C)  
D)

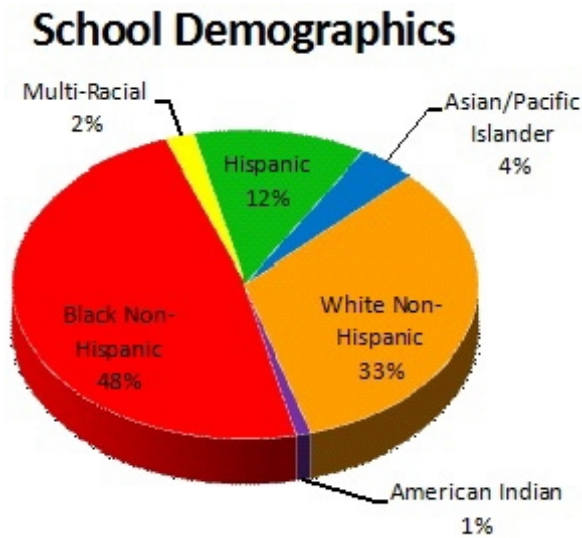
22) Phil has 12 stamps of denominations \$0.37 and \$0.23. If the total value of the stamps is \$3.18 how many \$0.37 stamps does Phil have? 22) \_\_\_\_\_

- A) 4                              B) 3                              C) 9                              D) 2

Answer: B

Explanation: A)  
B)  
C)  
D)

23) The demographics of an elementary school are shown below. The school has 504 students. Estimate the number of students who are White Non-Hispanic. 23) \_\_\_\_\_



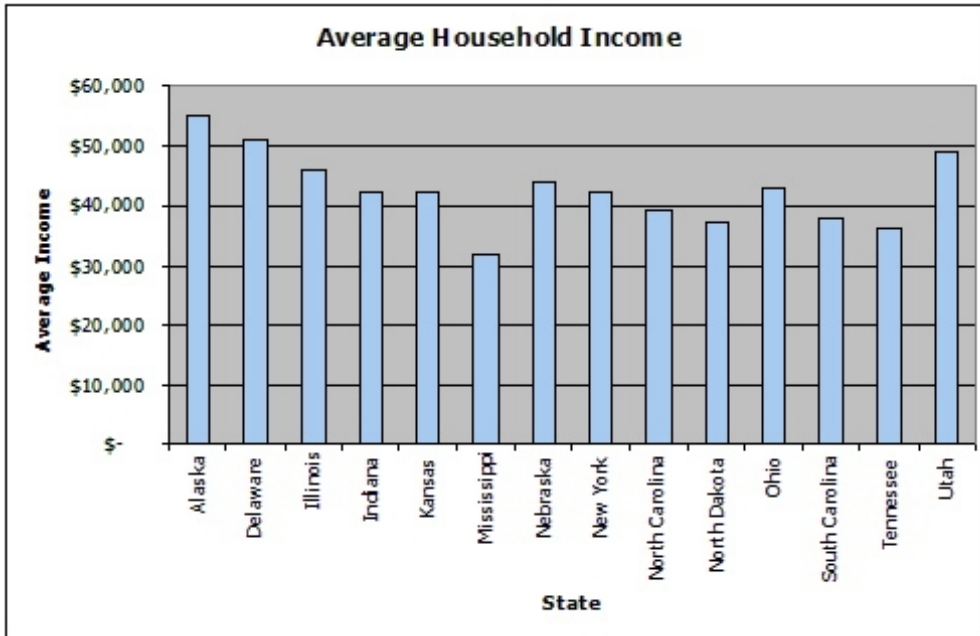
- A) 166                      B) 17                      C) 33                      D) 16,632

Answer: A

Explanation: A)  
B)  
C)  
D)

24) For a specific year, the average household income for selected states is shown here. Estimate the difference between the highest and lowest average incomes.

24) \_\_\_\_\_



- A) \$32,000                      B) \$40,000                      C) \$15,000                      D) \$23,000

Answer: D

Explanation: A)  
B)  
C)  
D)

25) The length of a garden is double its width. There is a fence around the perimeter that measures 180 ft. What are the length and width of the garden?

25) \_\_\_\_\_

- A) length = 90 ft, width = 45 ft                      B) length = 45 ft, width = 90 ft  
C) length = 60 ft, width = 30 ft                      D) length = 30 ft, width = 60 ft

Answer: C

Explanation: A)  
B)  
C)  
D)

26) Round 857,665,735 to the nearest ten-thousand.

26) \_\_\_\_\_

- A) 857,666,000                      B) 857,665,740                      C) 857,700,000                      D) 857,670,000

Answer: D

Explanation: A)  
B)  
C)  
D)



27) A recipe calls for 3 cups of flour. If the baker wants to make half a recipe, how much flour should be used? 27) \_\_\_\_\_

- A) 5 cups                      B) 6 cups                      C)  $1\frac{1}{2}$  cups                      D)  $\frac{2}{3}$  cup

Answer: C

Explanation: A)  
B)  
C)  
D)

28) Write a counter example to show that the statement is false. 28) \_\_\_\_\_

When any number is multiplied by 5 and the digits of the answer are added, the sum will be divisible by 5.

- A)  $11 \times 5 = 55$ ;  $5 + 5 = 10$ , which is divisible by 5.  
B)  $111 \times 5 = 555$ ;  $5 + 5 + 5 = 15$ , which is not divisible by 5.  
C)  $5 \times 5 = 25$ ;  $2 + 5 = 7$ , which is not divisible by 5.  
D)  $10 \times 5 = 50$ ;  $5 + 0 = 5$ , which is divisible by 5.

Answer: C

Explanation: A)  
B)  
C)  
D)

29) Determine whether the type of reasoning used is inductive or deductive reasoning. 29) \_\_\_\_\_

If a computer tech says it will cost \$125 to fix my computer, it will actually cost \$200. Since a computer tech told me it would cost \$125 to fix my computer, I can expect it to cost me \$200.

- A) deductive reasoning                      B) inductive reasoning

Answer: A

Explanation: A)  
B)

30) Determine whether the type of reasoning used is inductive or deductive reasoning. 30) \_\_\_\_\_

Matthew has already lost 5 cameras. He didn't spend a lot of money on his newest camera because he knows he'll eventually lose that one too.

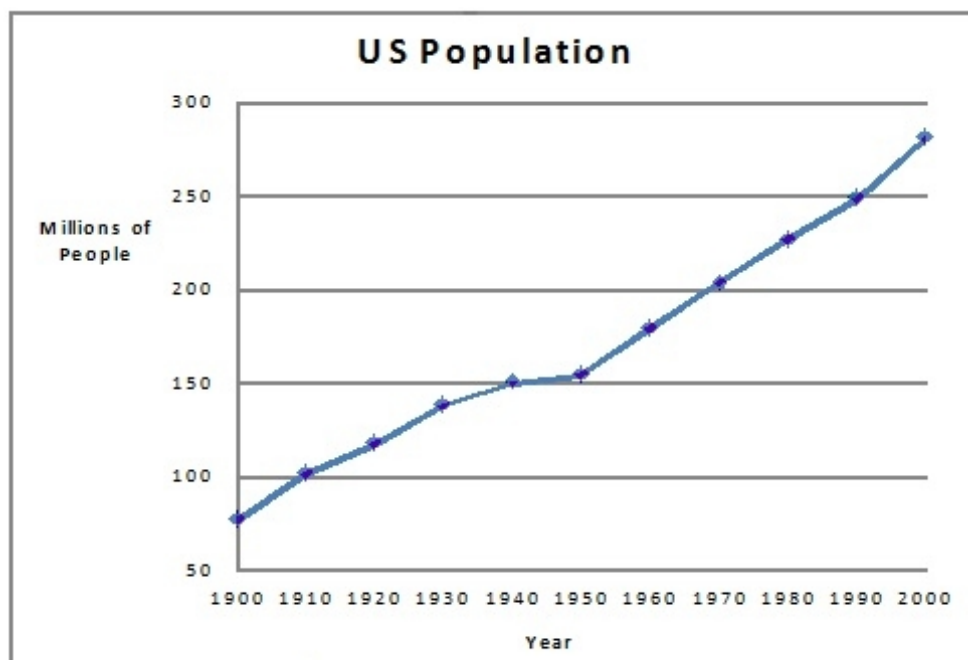
- A) inductive reasoning                      B) deductive reasoning

Answer: A

Explanation: A)  
B)

31) Estimate the number of people living in the US in 1910.

31) \_\_\_\_\_



Source: [www.census.gov](http://www.census.gov)

A) 12,100,000

B) 101,000,000

C) 81,000,000

D) 121,000,000

Answer: B

Explanation: A)  
B)  
C)  
D)

32) Write a counter example to show that the statement is false.

32) \_\_\_\_\_

When an odd number is added to the product of two even numbers,  
the result will be even.

A)  $4 \cdot 2 + 3 = 11$ . 11 is not even.

B)  $4 \cdot 5 + 1 = 21$ . 21 is not even.

C)  $3 \cdot 5 + 4 = 19$ . 19 is not even.

D)  $4 \cdot 5 + 2 = 22$ . 22 is even.

Answer: A

Explanation: A)  
B)  
C)  
D)

33) Jane has 17 phone cards worth either \$20 or \$15. How many of each does he have if the phone cards total \$315?

33) \_\_\_\_\_

A) twelve \$20 cards and five \$15 cards

B) five \$20 cards and twelve \$15 cards

C) eleven \$20 cards and six \$15 cards

D) fifteen \$20 cards and one \$15 cards

Answer: A

Explanation: A)  
B)  
C)  
D)

Answer Key  
 Testname: C1

- 1) \$39,000
- 2) approximately \$7
- 3) 160
- 4) Final answer is always -3.

Select a number:	$x$
Multiply by 8:	$8x$
Subtract 24 from the answer:	$8x - 24$
Divide by 8:	$\frac{8x - 24}{8} = x - 3$
Subtract the original number:	$x - 3 - x = -3$

- 5) 98,500,000
- 6) approximately \$146
- 7) \$4.40
- 8) \$712-\$720
- 9) approximately \$4560
- 10) 35
- 11) 9 and 27
- 12) A
- 13) C
- 14) C
- 15) C
- 16) C
- 17) C
- 18) A
- 19) D
- 20) B
- 21) C
- 22) B
- 23) A
- 24) D
- 25) C
- 26) D
- 27) C
- 28) C
- 29) A
- 30) A
- 31) B
- 32) A
- 33) A