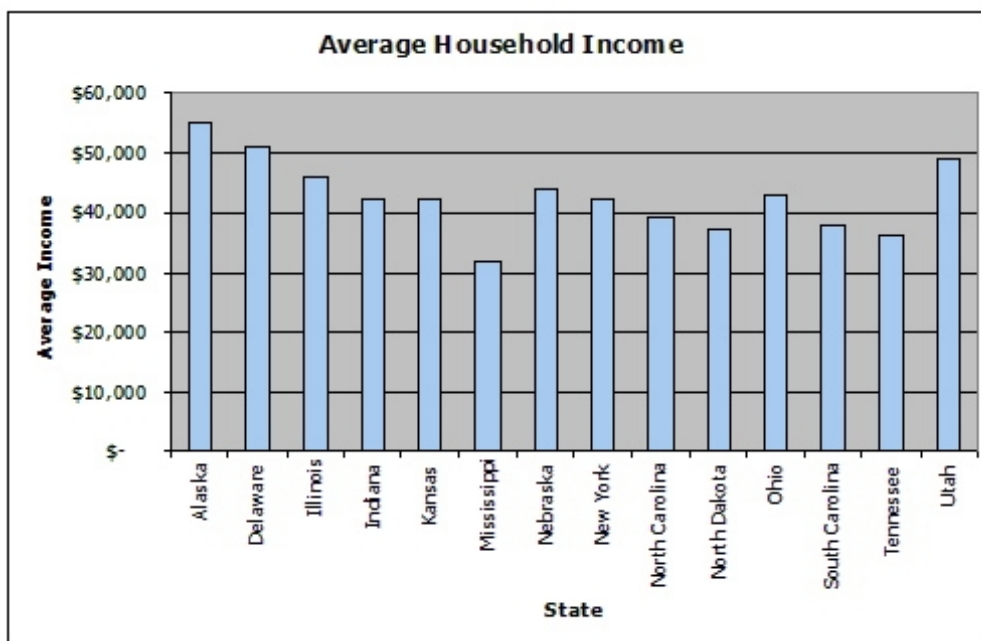


Exam

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.

5) _____

98,521,900

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. 11) _____

Find the numbers.

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)

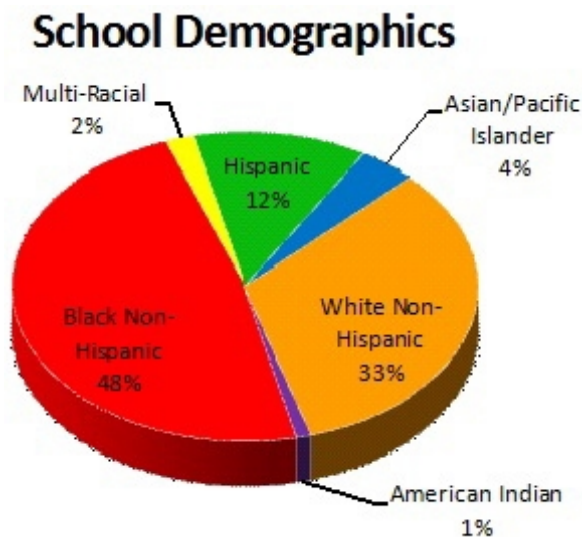
- 22) Phil has 12 stamps of denominations \$0.37 and \$0.23. If the total value of the stamps is \$3.18 how many \$0.37 stamps does Phil have? 22) _____

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) _____



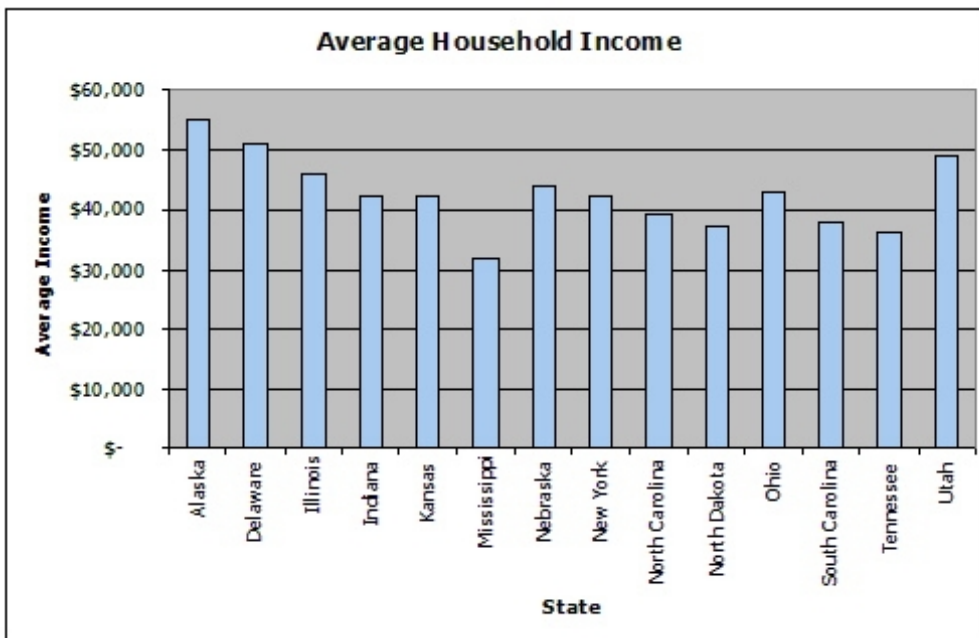
A) 166 B) 17 C) 33 D) 16,632

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.

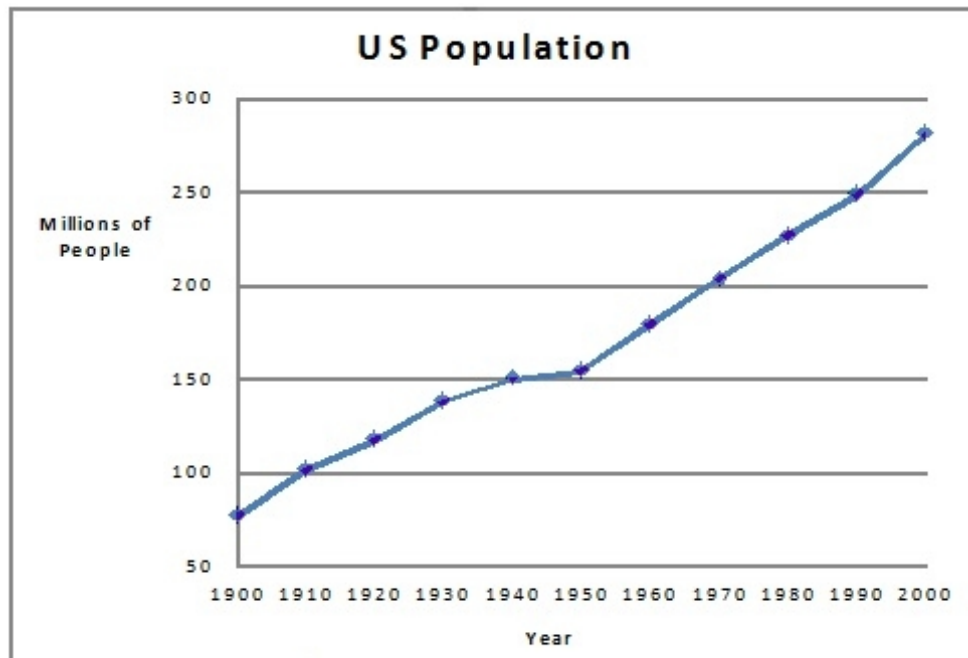
- A) inductive reasoning B) deductive reasoning

Answer: A

Explanation: A)
B)

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

31) _____



Source: www.census.gov

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