

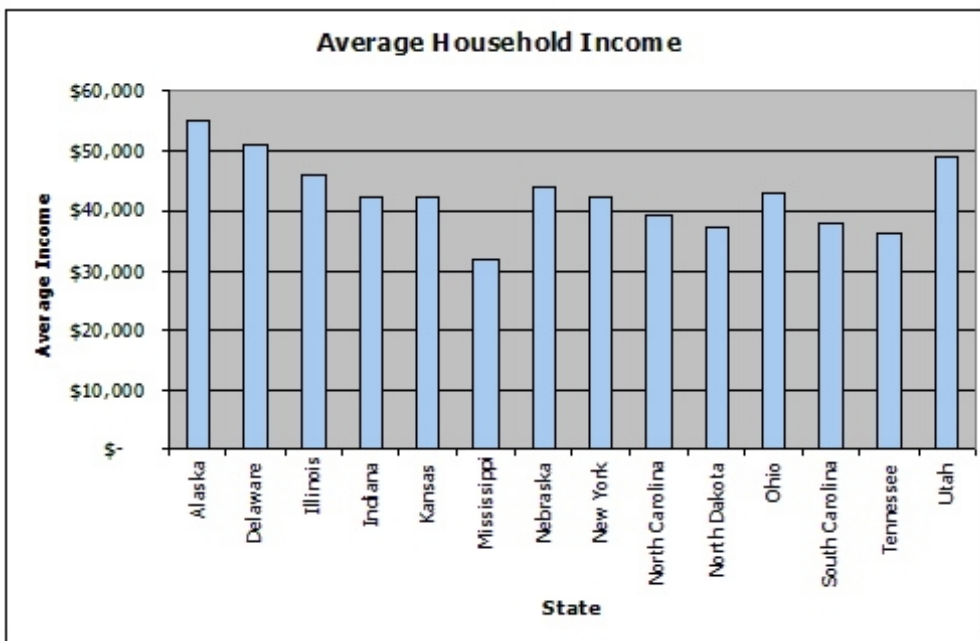
SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

- 1) 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 23-minute phone call if it was made during off-peak time as opposed to peak time. 1) _____

Answer: \$2.30

Diff: 4 Type: SA

- 2) For a specific year, the average household income for selected states is shown here. Estimate the average household income for Ohio. 2) _____



Answer: \$43,000

Diff: 2 Type: SA

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

- 3) A person's monthly budget includes \$236 for food, \$165 for gasoline, and \$170 for utilities. If the person earns \$2,406 per month, how much money is left for other expenses? 3) _____

- A) \$918 B) \$2,071 C) \$2,005 D) \$1,835

Answer: D

Diff: 2 Type: BI

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

- 4) An item that originally cost \$279.99 is on sale for 20% off. Estimate the sale price of the item. 4) _____

Answer: \$224-\$240

Diff: 3 Type: SA

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

- 5) The manager of an Internet cafe is having new counters custom-made. She wants to put 8 PCs on each counter with 3 feet between the PCs and 2 feet on each end. The PCs measure 18 inches wide and 24 inches high. What length of counters should the Internet cafe have made? 5) _____

A) 38 ft B) 41 ft C) 37 ft D) 40 ft

Answer: C

Diff: 4 Type: BI

- 6) The length of a garden is double its width. There is a fence around the perimeter that measures 114 ft. What are the length and width of the garden? 6) _____

A) length = 38 ft, width = 19 ft B) length = 28.5 ft, width = 57 ft
C) length = 19 ft, width = 38 ft D) length = 57 ft, width = 28.5 ft

Answer: A

Diff: 3 Type: BI

- 7) Jane has 15 phone cards worth either \$20 or \$15. How many of each does he have if the phone cards total \$245? 7) _____

A) eleven \$20 cards and four \$15 cards B) seven \$20 cards and seven \$15 cards
C) four \$20 cards and eleven \$15 cards D) three \$20 cards and twelve \$15 cards

Answer: C

Diff: 4 Type: BI

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

- 8) Read the following scenario and determine whether the type of reasoning used by Leanne is inductive or deductive. Explain how you decided.

Leanne was concerned that if she continued to be late for work, she would lose her job.

Answer: Deductive. Leanne knew that consistently being late can cause one to lose their job, so she reasoned that her tardiness could cause this to happen.

Diff: 0 Type: ES

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

9) A recipe calls for 3 cups of flour. If the baker wants to make half a recipe, how much flour should be used? 9) _____

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

Answer: C
Diff: 3 Type: BI

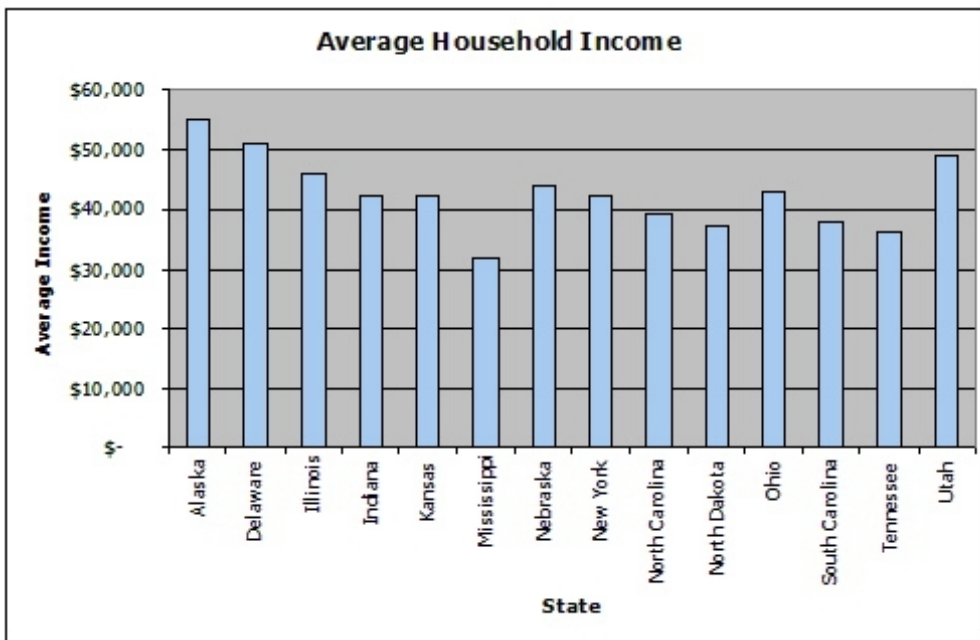
10) Use inductive reasoning to find a pattern, and then make a reasonable conjecture for the next number in the sequence. 10) _____

1 3 7 13 19 25 27 31 37

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

Answer: B
Diff: 2 Type: BI

11) For a specific year, the average household income for selected states is shown here. Estimate the difference between the highest and lowest average incomes. 11) _____

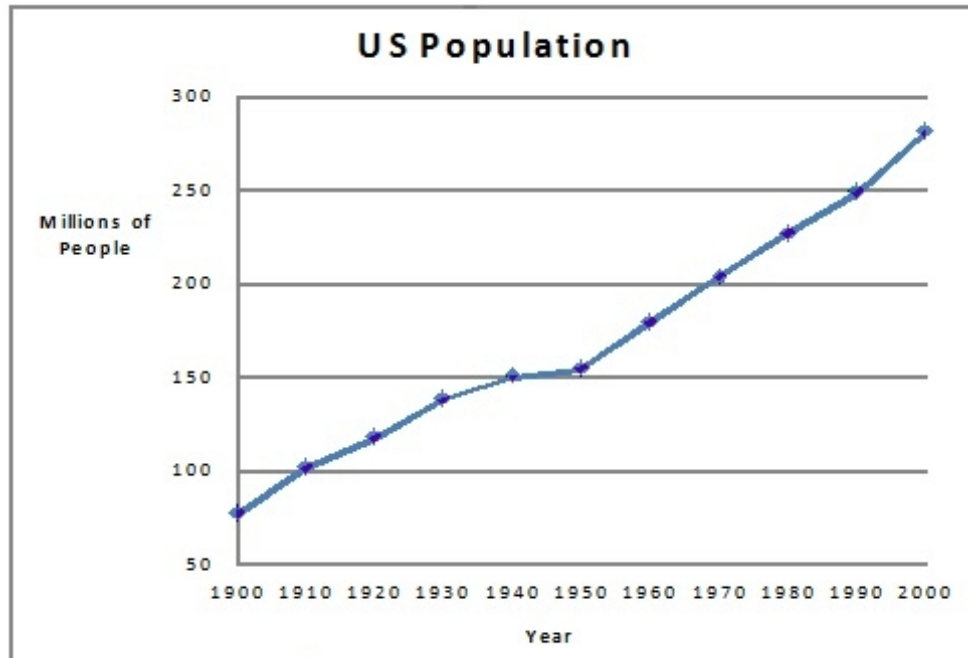


- A) \$40,000 B) \$15,000 C) \$32,000 D) \$23,000

Answer: D
Diff: 3 Type: BI

12) Estimate the number of people living in the US in 1,900.

12) _____



Source: www.census.gov

A) 56,000,000

B) 96,000,000

C) 76,000,000

D) 9,600,000

Answer: C

Diff: 2 Type: BI

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

13) _____

20 25 22 27 24 29 26 31

A) 28

B) 34

C) 36

D) 26

Answer: A

Diff: 3 Type: BI

14) Use deductive reasoning to arrive at a conclusion.

14) _____

On Christmas Day, Japanese restaurants and ski slopes are always open, so this Christmas Day we can

A) watch football and open gifts.

B) eat fast food and go skiing.

C) eat Mexican food and go skiing.

D) eat Japanese food and go skiing.

Answer: D

Diff: 4 Type: BI

18) Write a counter example to show that the statement is false. 18) _____
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) $2 \times 5 = 10$; $1 + 0 = 1$, which is not divisible by 5.
- C) $10 \times 5 = 50$; $5 + 0 = 5$, which is divisible by 5.
- D) $111 \times 5 = 555$; $5 + 5 + 5 = 15$, which is not divisible by 5.

Answer: B

Diff: 2 Type: BI

19) 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. 19) _____

$$0^2 + 1 = 1$$

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

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

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

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

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$$10^2 + 21 = ?$$

A) 12^2

B) 111

C) 11^2

D) 120

Answer: C

Diff: 3 Type: BI

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

- 20) 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. 20) _____

Select a number:

Multiply by 7:

Subtract 56 from the answer:

Divide by 7:

Subtract the original number:

Answer: Final answer is always -8.

Select a number:

x

Multiply by 7:

$7x$

Subtract 56 from the answer:

$7x - 56$

Divide by 7:

$\frac{7x - 56}{7} = x - 8$

Subtract the original number:

$x - 8 - x = -8$

Diff: 4 Type: SA

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

- 21) Phil has 12 stamps of denominations \$0.37 and \$0.23. If the total value of the stamps is \$4.02 how many \$0.37 stamps does Phil have? 21) _____
- A) 8 B) 9 C) 10 D) 3

Answer: B

Diff: 3 Type: BI

- 22) Round to the nearest hundredth. 22) _____
- 2.87491
- A) 2.88000 B) 2.87500 C) 2.87400 D) 2.87000

Answer: D

Diff: 2 Type: BI

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

- 23) Round to the nearest ten. 23) _____
- 202

Answer: 200

Diff: 2 Type: SA

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

24) Determine whether the type of reasoning used is inductive or deductive reasoning. 24) _____

Victor has already lost 3 cameras. He didn't spend a lot of money on his newest camera because he knows he'll eventually lose that one too.

A) deductive reasoning

B) inductive reasoning

Answer: B

Diff: 2 Type: BI

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

25) Bob and Sue are celebrating their 5th wedding anniversary. Estimate the total cost of their evening based on the prices below: 25) _____

theater \$63.59

dinner \$76.83

drinks \$17.71

taxi \$13.25

Answer: approximately \$172

Diff: 3 Type: SA

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

26) Write a counter example to show that the statement is false. 26) _____

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

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

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

Answer: A

Diff: 2 Type: BI

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

27) Estimate the cost to live in an apartment for 1 year if the rent is \$209 per month and utilities are \$64 per month. 27) _____

Answer: approximately \$3,240

Diff: 3 Type: SA

28) Use inductive reasoning to find a pattern, and then make a reasonable conjecture for the next number in the sequence. 28) _____

7 8 10 13 17 22 28 _____

Answer: 35

Diff: 2 Type: SA

29) Arrange the digits 3, 4, and 9 to form two numbers divisible by 6.

29) _____

Answer: 394 and 934

Diff: 3 Type: SA

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

30) 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.

30) _____

Select a number.

Add 90.

Multiply by 6.

Subtract 540.

Divide by 6.

Subtract the original number.

A) The answer is always the original number.

B) The answer is always 450.

C) The answer is always 0.

D) The answer is always -450.

Answer: C

Diff: 3 Type: BI

ESSAY. Write your answer in the space provided or on a separate sheet of paper.

31) Read the following scenario and determine whether the type of reasoning used by Paul is inductive or deductive. Explain how you decided.

Paul knew that his friend, Leanne, had been late the past 8 workdays, so he didn't save a seat for her at morning meeting.

Answer: Inductive. Paul assumed that because Leanne had a pattern of being late, this pattern would continue.

Diff: 0 Type: ES

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

32) One number is 21 more than another number. The sum of the numbers is 29.

32) _____

Find the numbers.

Answer: 4 and 25

Diff: 3 Type: SA

33) Estimate the total cost of the following meal at a sub shop. 33) _____

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

Answer: approximately \$7
Diff: 3 Type: SA

34) Use inductive reasoning to find a pattern, and then make a reasonable conjecture for the next number in the sequence. 34) _____

1 4 16 64 256 _____

Answer: 1,024
Diff: 2 Type: SA

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

35) Round 560,565,131 to the nearest ten-million. 35) _____
A) 561,000,000 B) 560,000,000 C) 600,000,000 D) 560,570,000

Answer: B
Diff: 2 Type: BI

36) 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. 36) _____

$$\begin{aligned} 12,345,679 \times 9 &= 111,111,111 \\ 12,345,679 \times 18 &= 222,222,222 \\ 12,345,679 \times 27 &= 333,333,333 \end{aligned}$$

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$$12,345,679 \times 45 = ?$$

- A) 666,666,666 B) 555,555,555 C) 555,555,510 D) 444,444,444

Answer: B
Diff: 3 Type: BI

Answer Key
Testname: CH1

- 1) \$2.30
Diff: 4 Page Ref:
Topic:
- 2) \$43,000
Diff: 2 Page Ref:
Topic:
- 3) D
Diff: 2 Page Ref:
Topic:
- 4) \$224-\$240
Diff: 3 Page Ref:
Topic:
- 5) C
Diff: 4 Page Ref:
Topic:
- 6) A
Diff: 3 Page Ref:
Topic:
- 7) C
Diff: 4 Page Ref:
Topic:
- 8) Deductive. Leanne knew that consistently being late can cause one to lose their job, so she reasoned that her tardiness could cause this to happen.
Diff: 0 Page Ref:
Topic:
- 9) C
Diff: 3 Page Ref:
Topic:
- 10) B
Diff: 2 Page Ref:
Topic:
- 11) D
Diff: 3 Page Ref:
Topic:
- 12) C
Diff: 2 Page Ref:
Topic:
- 13) A
Diff: 3 Page Ref:
Topic:
- 14) D
Diff: 4 Page Ref:
Topic:
- 15) A
Diff: 3 Page Ref:
Topic:
- 16) B
Diff: 2 Page Ref:
Topic:

Answer Key
Testname: CH1

17) B

Diff: 3 Page Ref:
Topic:

18) B

Diff: 2 Page Ref:
Topic:

19) C

Diff: 3 Page Ref:
Topic:

20) Final answer is always -8.

Select a number: x
Multiply by 7: $7x$
Subtract 56 from the answer: $7x - 56$
Divide by 7: $\frac{7x - 56}{7} = x - 8$
Subtract the original number: $x - 8 - x = -8$

Diff: 4 Page Ref:
Topic:

21) B

Diff: 3 Page Ref:
Topic:

22) D

Diff: 2 Page Ref:
Topic:

23) 200

Diff: 2 Page Ref:
Topic:

24) B

Diff: 2 Page Ref:
Topic:

25) approximately \$172

Diff: 3 Page Ref:
Topic:

26) A

Diff: 2 Page Ref:
Topic:

27) approximately \$3,240

Diff: 3 Page Ref:
Topic:

28) 35

Diff: 2 Page Ref:
Topic:

29) 394 and 934

Diff: 3 Page Ref:
Topic:

Answer Key

Testname: CH1

30) C

Diff: 3 Page Ref:
Topic:

31) Inductive. Paul assumed that because Leanne had a pattern of being late, this pattern would continue.

Diff: 0 Page Ref:
Topic:

32) 4 and 25

Diff: 3 Page Ref:
Topic:

33) approximately \$7

Diff: 3 Page Ref:
Topic:

34) 1,024

Diff: 2 Page Ref:
Topic:

35) B

Diff: 2 Page Ref:
Topic:

36) B

Diff: 3 Page Ref:
Topic: