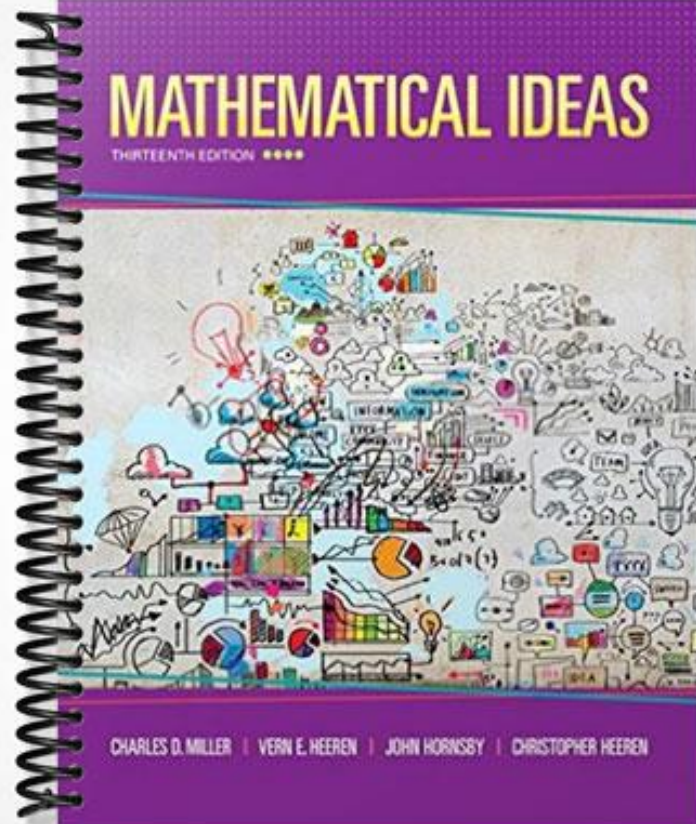


TEST BANK

MATHEMATICAL IDEAS

THIRTEENTH EDITION ●●●●



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INSTRUCTOR'S TESTING MANUAL

CHRISTOPHER MASON
Community College of Vermont

MATHEMATICAL IDEAS ELEVENTH EDITION MATHEMATICAL IDEAS EXPANDED ELEVENTH EDITION

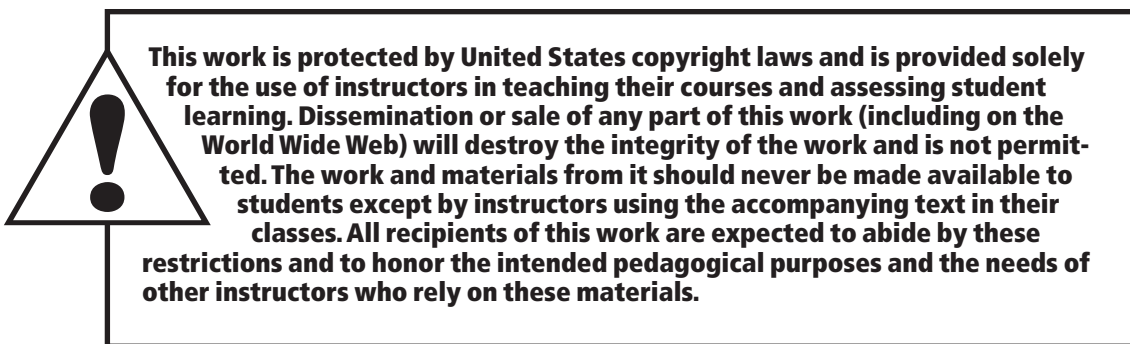
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Mathematical Ideas
Chapter 1 Test A

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

Decide whether the argument is an example of inductive or deductive reasoning.

- 1) $|-p| = p$, therefore $|-22| = 22$ 1) _____
 A) Deductive B) Inductive

Determine the most probable next term in the sequence.

- 2) 8, 13, 20, 29, 40, 53 2) _____
 A) 64 B) 70 C) 66 D) 68

Use inductive reasoning to predict the next equation.

- 3) $37,037 \times 3 = 111,111$ 3) _____
 $37,037 \times 6 = 222,222$
 $37,037 \times 9 = 333,333$
 $37,037 \times 12 = 444,444$
 A) $37,037 \times 13 = 481,481$ B) $37,037 \times 18 = 666,666$
 C) $111,111 \times 15 = 1,666,665$ D) $37,037 \times 15 = 555,555$

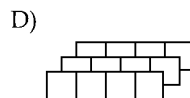
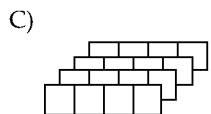
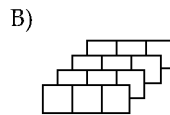
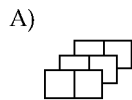
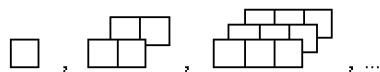
Use the method of Gauss to find the sum.

- 4) $2 + 4 + 6 + \dots + 700$ 4) _____
 A) 492,804 B) 30,625 C) 122,850 D) 122,500

Find a pattern and use it to solve the problem.

- 5) 7, 14, 21, 35 5) _____
 Find the next term.
 A) 42 B) 77 C) 70 D) 49

- 6) Draw the next figure in the pattern. 6) _____



Use the indicated formula to find the sum.

7) Use $S = \frac{n(n+1)}{2}$ to find the sum of $10 + 11 + 12 + \dots + 900$. 7) _____

- A) 405,450 B) 405,414 C) 404,514 D) 405,405

8) Use $S = n^2$ to find the sum of $1 + 3 + 5 + \dots + 501$. 8) _____

- A) 63,000 B) 63,001 C) 62,500 D) 63,002

Determine what the next equation would be, and verify that it is indeed a true statement.

9) $32 + 10 = 42$ 9) _____

$43 + 21 = 64$

$54 + 32 = 86$

- A) $56 + 43 = 99$ B) $64 + 53 = 117$
C) $65 + 32 = 97$ D) $65 + 43 = 108$

Use logic to solve the problem.

10) How much dirt is there in a hole 4 feet wide by 5 feet long by 10 feet deep? 10) _____

- A) None B) 200 ft^3 C) 20 ft^3 D) 40 ft^3

Use problem solving strategies to solve the problem.

11) A rabbit grows so that every 2 months it doubles in weight. However, the rabbit will 11) _____

never go over 75 pounds. If a bunny is born on July 15th, weighing 2 pounds, in which month will it weigh 46 pounds?

- A) April B) May C) June D) July

Solve the problem.

12) Alice's grandmother has a birthdate which is a 5-digit palindrome in the form a-bc-de, month-day-year. If d is 1 more than e and c is 2 more than b, what is her birthdate? 12) _____

- A) 2-13-12 B) 3-24-23 C) 1-24-21 D) 2-35-32

13) An average library contains at least 50 and at most 250 books. How many library owners must 13) _____

be polled to be certain that at least two owners have the same number of books in their libraries?

- A) 203 owners B) 200 owners
C) 201 owners D) 202 owners

Use your calculator to perform the indicated operations. Give as many digits in your answer as shown on your calculator display.

14) $(4.1)^2 + 7.9 - 3.3$ 14) _____

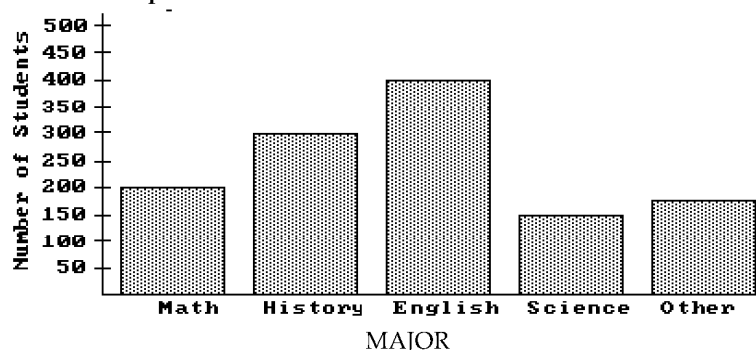
- A) 1 B) 21.41 C) 1.00 D) 12.8

- 15) $\sqrt{351.1876}$ 15) _____
 A) 6.92 B) 702.3752 C) 18.74 D) 175.5938

Give the appropriate counting number answer to the problem.

- 16) Each gallon of shingle stain covers 120 square feet. How many gallons should you buy to cover 430 square feet? 16) _____
 A) 3 B) 2 C) 5 D) 4
- 17) David's company has to ship 3114 boxes of sprinklers. If a truck can hold 550 boxes, how many trucks does he need to ship all the boxes? 17) _____
 A) 6 B) 7 C) 4 D) 5
- 18) An appliance store sells 58 refrigerators a week. Without finding the exact amount, calculate the total amount of money the store makes in a week if each refrigerator costs \$749. 18) _____
 A) \$35,000 B) \$42,000 C) \$48,000 D) \$40,000

The bar graph below shows the number of students by major in the College of Arts and Sciences. Answer the question.



- 19) What percent of students have a major other than math, history, English, or science (to the nearest tenth of a percent)? 19) _____
 A) 14.3% B) 16.7% C) 12.2% D) 16.3%

Use your calculator to perform each calculation and observe the answers. Use inductive reasoning to determine which statement is true.

- 20) $(-11)^3$; $(-4)^5$; $(-1.3)^7$; $(-0.96)^9$ 20) _____
 A) Raising a negative number to an odd power gives a negative result.
 B) Raising a negative number to an odd power can give either a positive or negative result.
 C) Raising a negative number to an odd power gives a positive result.
 D) Raising a negative number to an odd power gives an error message on a calculator.

Answer Key

Testname: CHAPTER 1 TEST A

- 1) A
- 2) D
- 3) D
- 4) C
- 5) D
- 6) C
- 7) D
- 8) B
- 9) D
- 10) A
- 11) A
- 12) C
- 13) D
- 14) B
- 15) C
- 16) D
- 17) A
- 18) B
- 19) A
- 20) A

Mathematical Ideas
Chapter 1 Test B

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

Decide whether the argument is an example of inductive or deductive reasoning.

- 1) Fresh fruit costs more in winter. This is January. Therefore these fresh strawberries will cost more. 1) _____
A) Inductive B) Deductive

Determine the most probable next term in the sequence.

- 2) 0008, 0080, 0800, 8000, 8008 2) _____
A) 8800 B) 8080 C) 8000 D) 8009

Use inductive reasoning to predict the next equation.

- 3) $8 \times 10 = 9 \times 11 - 19$
 $10 \times 12 = 11 \times 13 - 23$ 3) _____
A) $12 \times 14 = 13 \times 15 + 25$ B) $12 \times 14 = 13 \times 15 - 25$
C) $12 \times 14 = 13 \times 15 - 27$ D) $12 \times 14 = 15 \times 23 - 27$

Use the method of Gauss to find the sum.

- 4) $4 + 8 + 12 + \dots + 800$ 4) _____
A) 640,000 B) 80,400 C) 10,000 D) 80,000

Find a pattern and use it to solve the problem.

- 5) T, F, S, E, T, T, F 5) _____
Find the next term.
A) S B) F C) E D) T

Use the indicated formula to find the sum.

- 6) Use $S = \frac{n(n+1)}{2}$ to find the sum of $1 + 2 + 3 + \dots + 825$. 6) _____
A) 339,076 B) 340,725 C) 340,312 D) 339,900

Use the appropriate formula to find the indicated figurate number.

- 7) the 19th triangular number 7) _____
A) $T_{19} = 190$ B) $T_{19} = 20$
C) $T_{19} = 171$ D) $T_{19} = 180.5$

Determine what the next equation would be, and verify that it is indeed a true statement.

- 8) $(1 \times 9) - 4 = 5$ 8) _____
 $(21 \times 9) - 4 = 85$
 $(321 \times 9) - 4 = 2885$

- A) $(4,321 \times 9) - 4 = 38,885$ B) $(432 \times 9) - 4 = 38,885$
C) $(4,321 \times 9) - 4 = 3884$ D) $(4,321 \times 9) - 4 = 28,885$

Use the indicated formula to find the sum.

- 9) Use $S = n^2$ to find the sum of $11 + 13 + \dots + 701$. 9) _____
A) 106,276 B) 123,201 C) 123,176 D) 122,475

Use the method of successive differences to determine the next term in the sequence.

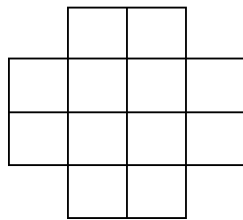
- 10) 4, 14, 82, 268, 657, 1359, ... 10) _____
A) 2484 B) 2509 C) 2499 D) 2534

Use logic to solve the problem.

- 11) In India, water lilies grow extremely fast. In one pond, a lily grew so fast that each day it doubled the area it covered. In 26 days it covered the pond. How long would it take 2 such lilies to cover the pond? 11) _____
A) 26 B) 13 C) 6 D) 25

Determine the number of figures (of any size) in the design.

- 12) Squares (of any size) 12) _____



- A) 13 B) 17 C) 18 D) 12

Use problem solving strategies to solve the problem.

- 13) A boxer takes 3 drinks of water after each of the first three rounds of a championship fight. After the fourth round he increases the number of drinks by 1. If he continues to increase his drinks by 1 after each round, how many drinks will he take between the 14th and 15th rounds? 13) _____
A) 14 drinks B) 10 drinks C) 19 drinks D) 20 drinks

Solve the problem.

- 14) If you raise 9 to the 387th power, what is the units digit of the result? 14) _____
A) 6 B) 7 C) 9 D) 1

- 15) A certain part of a metropolitan area has a palindromic, 5-digit area code, say abcde, satisfying these conditions: 15) _____

a, b and c are all multiples of two and are all less than 8;
 $a \neq b$ but $a + b = 6$;
 $c \neq d$ but $a + c = 12$;
 $e \neq b$ or d ;
 $b + d \neq 4$.

Determine the area code.

- A) 60606 B) 42024 C) 24842 D) 44244

Use your calculator to perform the indicated operations. Give as many digits in your answer as shown on your calculator display.

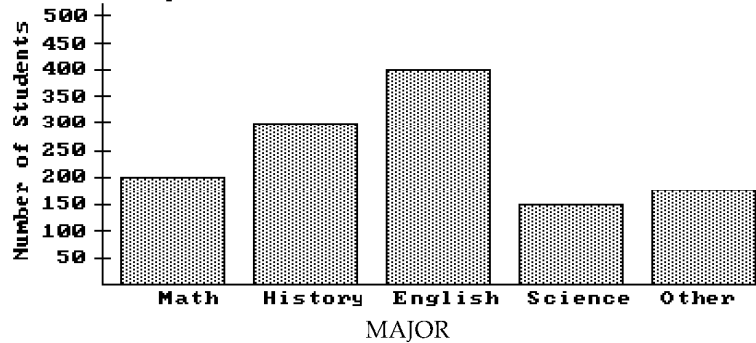
- 16) 2.3^2 16) _____
 A) 1.51657509 B) 4.6
 C) 1.15 D) 5.29

Give the appropriate counting number answer to the problem.

- 17) A particular freight elevator can safely carry 510 pounds. How many 152-pound bundles of wood can be safely carried by this elevator? 17) _____
 A) 3 B) 2 C) 4 D) 1

- 18) One cook can make enough food for 350 people a night. How many cooks are needed to feed 2341 people a night? 18) _____
 A) 6 B) 5 C) 7 D) 8

The bar graph below shows the number of students by major in the College of Arts and Sciences. Answer the question.

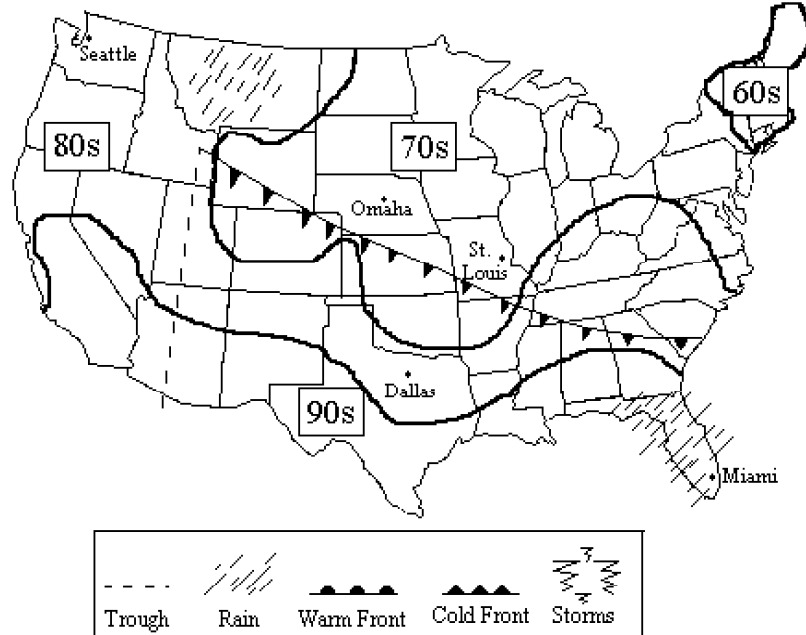


- 19) Which two majors combined account for more than half of the total number of students in the College of Arts and Sciences? 19) _____
 A) History and math B) History and English
 C) English and math D) English and other

Solve the problem.

20) The graph shows the predicted weather information for a day in August.

20) _____



Of the cities Seattle, Omaha, Miami, and St. Louis, which one has a prediction of rain?

- A) St. Louis B) Omaha C) Miami D) Seattle

Answer Key

Testname: CHAPTER 1 TEST B

- 1) B
- 2) B
- 3) C
- 4) B
- 5) A
- 6) B
- 7) A
- 8) A
- 9) C
- 10) B
- 11) D
- 12) B
- 13) A
- 14) C
- 15) A
- 16) D
- 17) A
- 18) C
- 19) B
- 20) C

Mathematical Ideas
Chapter 1 Test C

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

Decide whether the argument is an example of inductive or deductive reasoning.

- 1) Every coach knows his sport well. John Madden is a football coach. Therefore John Madden knows football well. 1) _____
- A) Inductive B) Deductive

Determine the most probable next term in the sequence.

- 2) 1, 5, 2, 10, 4, 20 2) _____
- A) 40 B) 8 C) 6 D) 30

Use inductive reasoning to predict the next equation.

- 3) $76 - 74 + 72 - 70 = 77 - 75 + 73 - 71$
 $86 - 84 + 82 - 80 = 87 - 85 + 83 - 81$ 3) _____
- A) $96 + 94 - 92 + 90 = 97 + 95 - 93 + 91$
B) $96 - 94 - 92 + 90 = 97 - 95 + 93 - 91$
C) $96 + 94 - 92 - 90 = 97 + 95 - 93 + 91$
D) $96 - 94 + 92 - 90 = 97 - 95 + 93 - 91$

Use the method of Gauss to find the sum.

- 4) $1 + 2 + 3 + \dots + 375$ 4) _____
- A) 35,156.25 B) 141,376 C) 70,312.5 D) 70,500

Find a pattern and use it to solve the problem.

- 5) 1, 1, 2, 3, 5, 8, 13 5) _____
- Find the next term.
- A) 15 B) 16 C) 18 D) 21

Use the appropriate formula to find the indicated figurate number.

- 6) the 19th triangular number 6) _____
- A) $T_{19} = 171$ B) $T_{19} = 20$
C) $T_{19} = 180.5$ D) $T_{19} = 190$

Use the indicated formula to find the sum.

- 7) Use $S = \frac{n(n+1)}{2}$ to find the sum of $1 + 2 + 3 + \dots + 400$. 7) _____
- A) 79,800 B) 8020 C) 80,000 D) 80,200

- 8) Use $S = \frac{n(n+1)}{2}$ to find the sum of $1 + 2 + 3 + \dots + 7000$. 8) _____
- A) 24,503,500 B) 12,248,250
 C) 24,499,999.5 D) 24,496,500

Determine what the next equation would be, and verify that it is indeed a true statement.

- 9) $20 - 9 = 11$ 9) _____
 $200 - 89 = 111$
 $2000 - 789 = 1211$
- A) $2000 - 6,789 = 13,211$ B) $20,000 - 6,789 = 13,211$
 C) $20,000 - 6,789 = 193,211$ D) $200,000 - 6,789 = 13,211$

Use logic to solve the problem.

- 10) If the hometown baseball team scored 2 runs every inning played, and the visiting team scored 1 run every inning played, what was the final score? 10) _____
- A) Home: 18 B) Home: 18 C) Home: 0 D) Home: 16
 Visitors: 8 Visitors: 9 Visitors: 0 Visitors: 9

Solve the problem.

- 11) A certain part of a metropolitan area has a palindromic, 5-digit area code, say abcde, satisfying these conditions: 11) _____
- a, b and c are all multiples of two and are all less than 8;
 $a \neq b$ but $a + b = 6$;
 $c \neq d$ but $a + c = 12$;
 $e \neq b$ or d ;
 $b + d \neq 4$.
- Determine the area code.
- A) 60606 B) 24842 C) 44244 D) 42024

- 12) A cell has at least 3 and at most 47 nucleii. How many cells must a scientist view under his microscope to be certain that at least two cells have the same number of nucleii? 12) _____
- A) 47 cells B) 45 cells C) 46 cells D) 44 cells
- 13) Alice's grandmother has a birthdate which is a 5-digit palindrome in the form a-bc-de, month-day-year. If d is 1 more than e and c is 2 more than b, what is her birthdate? 13) _____
- A) 2-13-12 B) 3-24-23 C) 2-35-32 D) 1-24-21

Complete the magic (addition) square. A magic square has the property that the sum of the numbers in any row, column, or diagonal is the same.

14) Use each number 5, 6, 7, 8, 9, 10, 11, 12, and 13 once.

14) _____

10		
	9	7
6	13	

A)

10	8	12
11	9	7
6	13	5

B)

10	5	11
12	9	7
6	13	8

C)

10	8	11
12	9	7
6	13	5

D)

10	5	12
11	9	7
6	13	8

Use problem solving strategies to solve the problem.

15) There is a number between 2 and 8, such that if you raise any of the remaining numbers to the power of this number, the units digit of the result will always be equal to the base. What is the number?

15) _____

A) 8

B) 3

C) 5

D) 2

Use your calculator to perform the indicated operations. Give as many digits in your answer as shown on your calculator display.

16) $\sqrt{351.1876}$

16) _____

A) 702.3752

B) 18.74

C) 6.92

D) 175.5938

Give the appropriate counting number answer to the problem.

17) Jane runs 21 miles a day. Without finding the exact answer, estimate the total number of miles Jane runs in 66 days.

17) _____

A) 1400

B) 1200

C) 4200

D) 2100

18) Each gallon of shingle stain covers 120 square feet. How many gallons should you buy to cover 430 square feet?

18) _____

A) 5

B) 4

C) 3

D) 2

Use your calculator to perform each calculation and observe the answers. Use inductive reasoning to determine which statement is true.

19) $\sqrt{-13}$; $\sqrt[4]{-2}$; $\sqrt[6]{-1.8}$; $\sqrt[8]{-278}$

19) _____

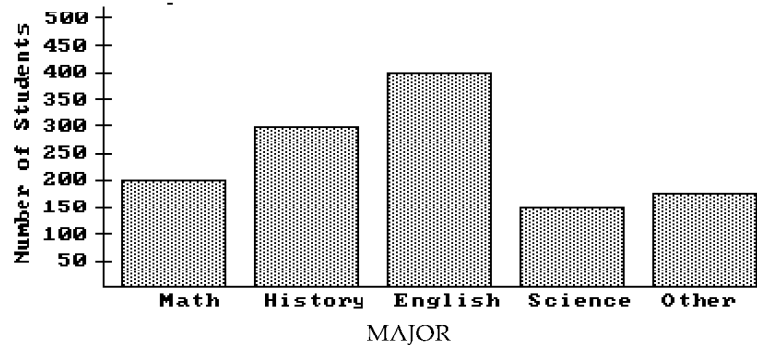
A) An even root of a negative number is positive.

B) An even root of a negative number is negative.

C) An even root of a negative number can be either positive or negative.

D) An even root of a negative number is undefined.

The bar graph below shows the number of students by major in the College of Arts and Sciences. Answer the question.



20) How many more English majors are there than history majors?

20) _____

- A) 500 B) 100 C) 200 D) 150

Answer Key

Testname: CHAPTER 1 TEST C

- 1) B
- 2) B
- 3) D
- 4) D
- 5) D
- 6) D
- 7) D
- 8) A
- 9) B
- 10) D
- 11) A
- 12) C
- 13) D
- 14) D
- 15) C
- 16) B
- 17) A
- 18) B
- 19) D
- 20) B

Mathematical Ideas
Chapter 1 Test D

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

Decide whether the argument is an example of inductive or deductive reasoning.

- 1) $13 + 5 = 18$, $5 + 19 = 24$, $3 + 23 = 26$. Therefore, the sum of two prime numbers is even. 1) _____
- A) Inductive B) Deductive

Determine the most probable next term in the sequence.

- 2) 6, -18, 54, -162, 486 2) _____
- A) 1458 B) 810 C) -810 D) -1458

Use inductive reasoning to predict the next equation.

- 3) $\frac{1}{3} = \frac{1}{2} \left(1 - \frac{1}{3} \right)$ 3) _____
- $\frac{1}{3} + \frac{1}{9} = \frac{1}{2} \left(1 - \frac{1}{9} \right)$
- $\frac{1}{3} + \frac{1}{9} + \frac{1}{27} = \frac{1}{2} \left(1 - \frac{1}{27} \right)$
- $\frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \frac{1}{81} = \frac{1}{2} \left(1 - \frac{1}{81} \right)$

- A) $\frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \frac{1}{81} + \frac{1}{243} = \frac{1}{2} \left(1 - \frac{1}{243} \right)$
- B) $\frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \frac{1}{81} + \frac{1}{729} = \frac{1}{2} \left(1 - \frac{1}{729} \right)$
- C) $\frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \frac{1}{81} + \frac{1}{243} = \frac{1}{3} \left(1 - \frac{1}{243} \right)$
- D) $\frac{1}{3} + \frac{1}{9} + \frac{1}{27} + \frac{1}{81} + \frac{1}{162} = \frac{1}{2} \left(1 - \frac{1}{162} \right)$

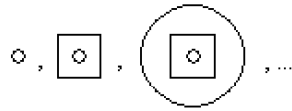
Use the method of Gauss to find the sum.

- 4) $4 + 8 + 12 + \dots + 800$ 4) _____
- A) 10,000 B) 80,000 C) 80,400 D) 640,000

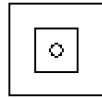
Find a pattern and use it to solve the problem.

5) Draw the next figure in the pattern.

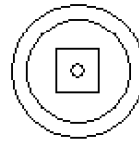
5) _____



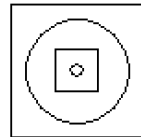
A)



B)



C)



D)



6) 30, 4, 26, 6, 20, 8

Find the next term.

6) _____

A) 28

B) 12

C) 16

D) 0

Use problem solving strategies to solve the problem.

7) The number of dogs and chickens on a farm add up to 12. The number of legs between them is 28. How many dogs and how many chickens are on the farm if there are at least twice as many chickens as dogs?

7) _____

A) 2 dogs, 10 chickens

B) 3 dogs, 9 chickens

C) 6 dogs, 6 chickens

D) 4 dogs, 8 chickens

8) I'm thinking of a number between 4 and 10. If I square my number and find the difference of the digits, I will end up with the cube root of my number. What is my number?

8) _____

A) 10

B) 6

C) 4

D) 8

Use the appropriate formula to find the indicated figurate number.

9) the 15th hexagonal number

9) _____

A) $H_{15} = 127.5$

B) $H_{15} = 465$

C) $H_{15} = 390$

D) $H_{15} = 435$

Determine what the next equation would be, and verify that it is indeed a true statement.

10) $14 \times 15 = 16 \times 17 - (14 + 15 + 16 + 17)$ 10) _____
 $15 \times 16 = 17 \times 18 - (15 + 16 + 17 + 18)$

- A) $16 \times 17 = 18 \times 19 - (16 + 17 + 18 + 19)$
- B) $16 \times 17 = 18 \times 19 - (14 + 15 + 16 + 17 + 18 + 19)$
- C) $17 \times 18 = 19 \times 20 - (16 + 15 + 14 + 13)$
- D) $17 \times 18 = 19 \times 20 - (17 + 18 + 19 + 20)$

Use the indicated formula to find the sum.

11) Use $S = n^2$ to find the sum of $1 + 3 + 5 + \dots + 599$. 11) _____

- A) 178,802
- B) 89,401
- C) 22,500
- D) 90,000

Use your calculator to perform each calculation and observe the answers. Use inductive reasoning to determine which statement is true.

12) $(-27)^2$; $(-3)^4$; $(-0.3)^6$; $(-1.68)^8$ 12) _____

- A) Raising a negative number to an even power can give either a positive or negative result.
- B) Raising a negative number to an even power gives a positive result
- C) Raising a negative number to an even power gives an error message on a calculator.
- D) Raising a negative number to an even power gives a negative result.

13) $\frac{(-3) \times 24}{8 \times 3}$; $\frac{(-14) \times 25}{(-5) \times (-7)}$; $\frac{-3 \times (-40)}{(-2) \times (-12) \times (-7)}$; $\frac{-3.8 \times (-4) \times 1.3 \times (-5)}{(-9) \times (-9.4) \times (6.1)}$ 13) _____

What is true about expressions containing products of nonzero numbers in both the numerator and denominator?

- A) If the total number of negative numbers in the expression is odd, the result is smaller than -1.
- B) If the total number of negative numbers in the expression is odd, the result is positive.
- C) If the total number of negative numbers in the expression is odd, the result can be either negative or positive.
- D) If the total number of negative numbers in the expression is odd, the result is negative.

Use logic to solve the problem.

14) If the hometown baseball team scored 2 runs every inning played, and the visiting team scored 1 run every inning played, what was the final score? 14) _____

- A) Home: 0 B) Home: 18 C) Home: 16 D) Home: 18
- Visitors: 0 Visitors: 8 Visitors: 9 Visitors: 9

15) How much dirt is there in a hole 4 feet wide by 5 feet long by 10 feet deep? 15) _____

- A) 40 ft^3
- B) 20 ft^3
- C) None
- D) 200 ft^3

Give the appropriate counting number answer to the problem.

16) Each gallon of shingle stain covers 120 square feet. How many gallons should you buy to cover 430 square feet? 16) _____

- A) 3 B) 4 C) 5 D) 2

17) Jane runs 21 miles a day. Without finding the exact answer, estimate the total number of miles Jane runs in 66 days. 17) _____

- A) 4200 B) 2100 C) 1200 D) 1400

Use your calculator to perform the indicated operations. Give as many digits in your answer as shown on your calculator display.

18) $9.6 - 2(21 \div 3 + 1)$ 18) _____

- A) -5.60 B) 35.2 C) -6.4 D) -2.88

Complete the magic (addition) square. A magic square has the property that the sum of the numbers in any row, column, or diagonal is the same.

19) Use each number 3, 4, 5, 6, 7, 8, 9, 10, and 11 once. 19) _____

6		
5	7	
10	3	8

A)

6	9	11
5	7	4
10	3	8

B)

6	9	4
5	7	11
10	3	8

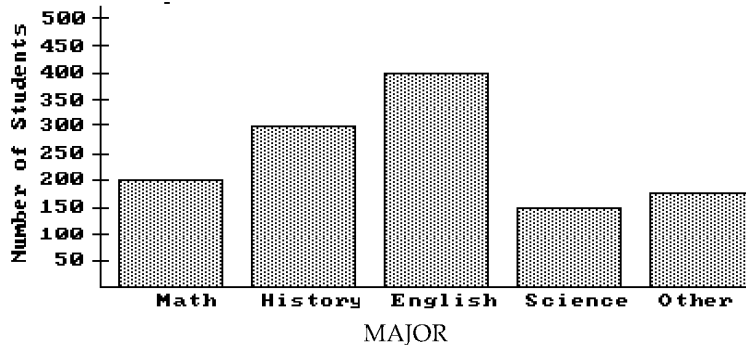
C)

6	11	4
5	7	9
10	3	8

D)

6	11	9
5	7	4
10	3	8

The bar graph below shows the number of students by major in the College of Arts and Sciences. Answer the question.



20) How many students are in the College of Arts and Sciences? 20) _____

- A) 1,250 B) 1,225 C) 1,050 D) 1,325

Answer Key

Testname: CHAPTER 1 TEST D

- 1) A
- 2) D
- 3) A
- 4) C
- 5) C
- 6) B
- 7) A
- 8) D
- 9) D
- 10) A
- 11) D
- 12) B
- 13) D
- 14) C
- 15) C
- 16) B
- 17) D
- 18) C
- 19) C
- 20) B

Mathematical Ideas
Chapter 2 Test A

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

Complete the blank with either \in or \notin to make the statement true.

- 1) $-8 \underline{\hspace{1cm}}$ $\{8, 10, 12, \dots, 20\}$ 1) _____
A) \in B) \notin

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

Tell whether the statement is true or false.

- 2) $\{s, q, y, o, d\} = \{o, d, q, s, y\}$ 2) _____

Write true or false for the following statement.

Let $A = \{3, 5, 7, 9, 11, 13\}$

$B = \{3, 5, 9, 11\}$

$C = \{5, 9, 13\}$

- 3) $\{x \mid x \text{ is an odd counting number less than } 15\} = A$ 3) _____

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

Determine whether or not the set is well defined.

- 4) $\{x \mid x \text{ is a stock on the AmEx today}\}$ 4) _____
A) Well defined B) Not well defined

Find $n(A)$ for the set.

- 5) $A = \{x \mid x \text{ is a month in the year}\}$ 5) _____
A) $n(A) = 1$ B) $n(A) = 52$ C) $n(A) = 24$ D) $n(A) = 12$

Identify the set as finite or infinite.

- 6) $\{x \mid x \text{ is a prime number}\}$ 6) _____
A) Infinite B) Finite

List the elements in the set.

- 7) $\{x \mid x \text{ is an even integer smaller than } 8\}$ 7) _____
A) $\{0, 2, 4, 6\}$
B) $\{\dots, -6, -4, -2, 0, 2, 4, 6\}$
C) $\{\dots, -6, -4, -2, 2, 4, 6\}$
D) $\{2, 4, 6\}$