

Practice Test 2

Student Name:
Test Date:

Start Time:
End Time:

Part A

Here are some reminders for when you are taking the multiple-choice section.



- Carefully read each problem before choosing an answer.
- Be sure to choose only one answer for each problem.
- Do not circle the correct answer. You must fill the bubble.
- Do not spend too much time on any one problem. If you are having difficulty with a problem, skip it and move on to the next problem.
- You can come back to the skipped problem later if you have time

1. Which of the following must be true if a figure is a right triangle?

- (A) two sides must be of equal length
- (B) one internal angle must equal 90-degrees
- (C) the three internal angles must equal 180
- (D) one angle must be larger than 45-degrees

2. You are given \$500 and invest it for three years at a simple interest rate of 6.2%. If you get to take out half of the interest earned to spend as you wish, how much money do you have to spend?

- (A) \$46.50
- (B) \$93
- (C) \$31
- (D) \$10.33



3. Rewrite 0.434343..... as a fraction.

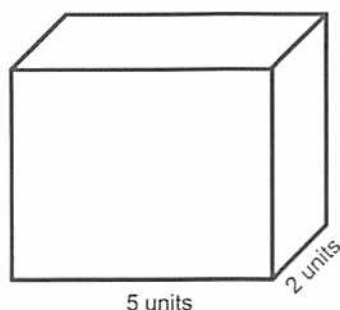
Ⓐ $\frac{43}{100}$

Ⓑ $\frac{43}{9}$

Ⓒ $\frac{43}{99}$

Ⓓ $\frac{433}{999}$

4. What is the height of this figure, given it's volume is 40 units³?



Ⓐ 140

Ⓑ 4

Ⓒ 10

Ⓓ 14

5. The Rodriguez family went out to dinner. They purchased a large salad, a large pizza with four toppings, and a pitcher of lemonade.

Menu:

Large pizza: \$12.50

Toppings: \$0.75 each

Pitcher of lemonade: \$6

If the sales tax is 8.25% and you plan to leave a 15% tip, how much would you spend?

Ⓐ \$3.22

Ⓑ \$1.77

Ⓒ \$26.49

Ⓓ \$24.72

6. Ashley jogged around a $\frac{1}{4}$ mile track for 3 hours on a warm Sunday afternoon. She completed 45 laps around the track. What was her average speed (rate)?

- Ⓐ 2.00 mph
- Ⓑ 3.75 mph
- Ⓒ 4.50 mph
- Ⓓ 5.50 mph

7. Simplify the given expression.

$$18x + 5y - 6x$$

- Ⓐ $23x + 5y$
- Ⓑ $17x$
- Ⓒ $12x + 5y$
- Ⓓ $17xy$

8. What is the product of -16 and 8?

- Ⓐ -128
- Ⓑ 128
- Ⓒ -24
- Ⓓ -8

9. Three customers purchased gas at the same station on the same day. Their purchases are in this table:

	11 gallons	12 gallons	13 gallons
Price (\$) including all taxes	51.37	56.04	60.71

What was the price of the gas per gallon (including all taxes)?

- Ⓐ \$4.67
- Ⓑ \$9.34
- Ⓒ \$56.04
- Ⓓ \$168.12

10. $63 \div 9 + 6 (108 \div 9) =$

- Ⓐ 254
- Ⓑ 156
- Ⓒ 79
- Ⓓ 0.35

11. One-tenth of the shells that are found on the beach are in great condition. During a morning walk on the beach 370 shells were found. How many were not in great condition?

- Ⓐ 37
- Ⓑ 94
- Ⓒ 333
- Ⓓ 343

12. Solve for x .

$$\frac{32}{56} = \frac{20}{x}$$

- Ⓐ $x = 26$
- Ⓑ $x = 35$
- Ⓒ $x = 40$
- Ⓓ $x = 45$

13. Which two formulas could be used to find the circumference of a circle?

- Ⓐ $A = (\pi)r^2$ or $C = (\pi)d$
- Ⓑ $D = C/\pi$ or $A = (\pi)r^2$
- Ⓒ $C = (\pi)d$ or $C = 2(\pi)r$
- Ⓓ $C = 2(\pi)r$ or $C = (\pi)r^2$

14. As a sales person, you are paid \$11.50 per hour plus \$2 for every extra large pizza you sell. If you need to earn at least \$100 per week, which of the following could you use to determine when you've reached your goal? [given: x is the number of hours worked and y is the number of extra large pizzas]

- Ⓐ $11.50x + 2y = 100$
- Ⓑ $11.50y + 2x = 100$
- Ⓒ $11.50x + 2y > 100$
- Ⓓ $11.50x + 2y < 100$

15. Simplify the expression.

$$10x + 14n - 3x + 18n$$

- Ⓐ $13x + 22n$
- Ⓑ $7x + 22n$
- Ⓒ $13x + 32n$
- Ⓓ $7x + 32n$

Questions 16 and 17 are short constructed response questions.

- Carefully read each problem before writing your answer.

16. Mary wants to make three dozen cookies, and recipe for one dozen cookies consist of one cup of butter and two cups of milk. How much butter and milk will she need to make three dozen cookies?

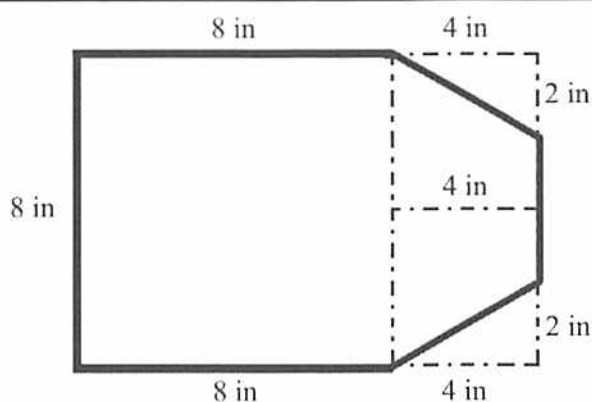
17. A square has an area of 400 sq. cm. What is the length of one of its diagonals (to the nearest tenth of a centimeter)?



Extended Constructed Response 1

Here are some reminders for when you are completing this Extended Constructed Response task.

- Carefully read each part of the task before writing your response.
- Be sure to complete all parts of the task.
- Clearly explain your answer and show all your work.
- Your explanation can include words, tables, diagrams, or pictures.
- You may use a calculator and a ruler for this task.



Calculate the area of the above figure in two different ways. Be sure to show all work.

Part B

Here are some reminders for when you are taking the multiple-choice section.



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18. Examine the following conditions for a geometric figure:

- All sides are equal in length
- All internal angles are equal

Given the above conditions, which of the following is most likely true?

- Ⓐ The figure could not be a triangle.
- Ⓑ The figure must be a square.
- Ⓒ The figure could be an equilateral triangle.
- Ⓓ The figure could be a right triangle.

19. The top of a laptop computer measures 1 foot by 11 inches. What is the area of the computer's top surface in square inches?

- Ⓐ 132 square inches
- Ⓑ 128 square inches
- Ⓒ 11 square inches
- Ⓓ 13 square inches

20. A student decided to keep a running record of how far she rode her bike all month:

Number of hours riding	0	2	4	6	8
Total distance traveled (miles)	0	10	20	30	40

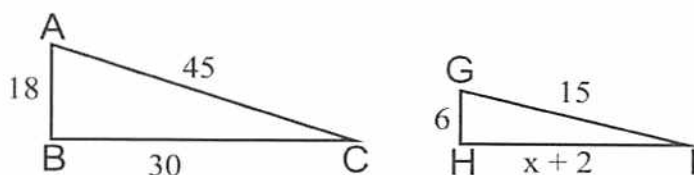
How fast did she ride per hour and how far will she have traveled after 50 hours riding?

- Ⓐ 0.5 miles per hour; 50 miles traveled
- Ⓑ 2.0 miles per hour; 100 miles traveled
- Ⓒ 5.0 miles per hour; 250 miles traveled
- Ⓓ 5.0 miles per hour; 260 miles traveled

21. Which of the following is closest to the circumference of a circle with a diameter of 23 cm?

- Ⓐ 722 mm
- Ⓑ 70 cm
- Ⓒ 145 cm
- Ⓓ 1444 mm

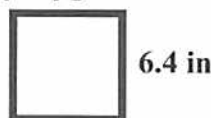
22. $\triangle ABC$ and $\triangle GHI$ are similar. Find the value of x .



Restate prompt as: Triangle ABC is drawn as three times larger than triangle GHI. Find the value of x .

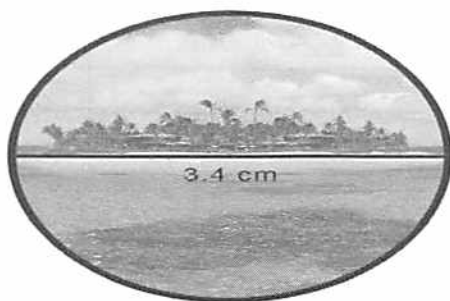
- Ⓐ $x = 10$
- Ⓑ $x = 8$
- Ⓒ $x = 16$
- Ⓓ $x = 5$

23. Find the area of this regular polygon.



- Ⓐ 12.8 in^2
- Ⓑ 20.48 in^2
- Ⓒ 28.56 in^2
- Ⓓ 40.96 in^2

24. The chart shows an island drawn to scale.



1 cm = 5 miles

What is the actual diameter of the bay in miles?

- Ⓐ 3.4 miles
 - Ⓑ 5 miles
 - Ⓒ 8.5 miles
 - Ⓓ 17 miles
25. For which of the following values of t would A be a whole number?
- $$A = \left(\frac{1}{4}\right)t - 2.5$$
- Ⓐ 40
 - Ⓑ 56
 - Ⓒ 100
 - Ⓓ 10
26. One fourth a cup of tea powder mix makes four cups of tea. How much tea powder is needed to make a gallon of tea?
- Ⓐ half a cup
 - Ⓑ 2 cups
 - Ⓒ 1 cup
 - Ⓓ 4 cups
27. A gardener is checking the progress of her bamboo tree. Today it is 250 cm tall. Based on her measurements, the tree grows one and a quarter cm per day. How tall does she expect the tree to be in three days?
- Ⓐ 253.75 cm
 - Ⓑ 255 cm
 - Ⓒ 253.5 cm
 - Ⓓ 255 $\frac{1}{4}$ cm

Questions 28 and 29 are short constructed response questions.

- Carefully read each problem before writing your answer.

28. If three coins are tossed in the air what is the probability of the three coins landing on heads?

29. Mr. Harris earns a 5% commission on each piece of furniture he sells. On Tuesday, he sold a total of \$3,590 in furniture. What was his commission?



Extended Constructed Response 2

Here are some reminders for when you are completing this Extended Constructed Response task.

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- You may use a calculator and a ruler for this task.

John claims $2(4x + 3) - 5x$ is equivalent to $3x + 3$. Is John's claim correct or not? Prove your answer. Write two new expressions that are equivalent.

Part C

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30. John is putting a hard wood floor down in his living room. He measures the floor and concludes the floor is 201ft^2 . The actual area of the floor is 200ft^2 . What is John's percent error?

- (A) 5%
- (B) .5%
- (C) .05%
- (D) 50%

31. A magician shuffles a regular deck of cards. What is the probability that the top card will be the queen of hearts?

- (A) $\frac{1}{52}$
- (B) $\frac{1}{4}$
- (C) $\frac{4}{52}$
- (D) $\frac{1}{13}$

32. Mary arranged 330 flowers for a wedding, but she needed 300 flowers to complete her arrangements. What was her percent error?

- (A) 3%
- (B) 30%
- (C) 9%
- (D) 10%

33. Maria has \$1000 in a bank account at the beginning of the summer. She wants to have at least \$200 in the account at the end of the summer. She plans to withdraw \$50 each week for food and entertainment. Which inequality reflects this situation?
- Ⓐ $200 \leq 1000 - 50w$
 - Ⓑ $1000 > 200 - 50w$
 - Ⓒ $1000 - 50w < 200$
 - Ⓓ $1000 - 50w \geq 200$
34. There were 30 students entered in an essay contest. The first, second, and third place winners will receive scholarships to a summer literacy workshop. Considering all entries to be possible winners, how many different possible outcomes are there for the top three winners?
- Ⓐ 27,000
 - Ⓑ 24,360
 - Ⓒ 90
 - Ⓓ 900
35. A bag contains a mixture of green, red, and blue marbles. There are twice as many red marbles as green marbles, and twice as many blue marbles as red marbles. What is the probability of pulling a green marble (at random) out of the bag?
- Ⓐ 1 out of 3
 - Ⓑ 1 out of 7
 - Ⓒ 2 out of 5
 - Ⓓ It cannot be determined.
36. A population consists of four observations: {2, 4, 6, 8}. What is the variance?
- Ⓐ 2
 - Ⓑ 3
 - Ⓒ 5
 - Ⓓ 8
37. The taxi charges a flat rate of \$1.25 in addition to \$0.40 per mile. Victoria has no more than \$15 to spend on the ride. How many miles can Victoria travel on her budget?
- Ⓐ 34 miles
 - Ⓑ 35 miles
 - Ⓒ 40 miles
 - Ⓓ 100 miles

38. If three coins are tossed, what is the probability of getting exactly two tails?

- Ⓐ 0.25
- Ⓑ 0.375
- Ⓒ 0.50
- Ⓓ 0.875

39. Christian has four cousins and wants to bring each a little gift. He has a baseball cap, a skateboard, a scarf and a video game. If his youngest cousin gets the video game, what are the chances he will give his oldest cousin the skateboard?

- Ⓐ 0.75
- Ⓑ 0.5
- Ⓒ 0.33
- Ⓓ 0.25

Questions 40 and 41 are short constructed response questions.

- Carefully read each problem before writing your answer.

40. Mary had \$111 to spend at the New York State Fair. She paid to play 40 games (All the games cost the same amount of money). She had \$11 left. How much did one game cost?

41. John rolls a pair of dice six times and gets two twos six times. If he rolls the pair of dice a seventh time, what is the probability he will get two twos?



Extended Constructed Response 3

Here are some reminders for when you are completing this Extended Constructed Response task.

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- You may use a calculator and a ruler for this task.

The dimensions of a rectangular prism are as follows: height = 14inches; length = 20inches; width = 12inches

What is the surface area of the prism?

What is the volume of the prism?

Explain how surface area and volume are related to each other.