

Practice Test 1

Student Name:
Test Date:

Start Time:
End Time:

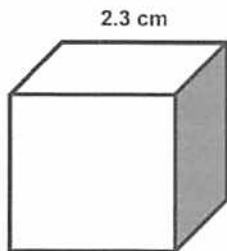
Part A

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. What is the surface area of this cube?



- (A) 5.29 sq cm
(B) 13.8 sq cm
(C) 27.6 sq cm
(D) 31.74 sq cm
2. Wendy's weight was measured on the same date each year. Her weight for the past 5 years are: 39, 43, 45, 49 and 51 lbs. respectively. Based on her average rate of change in weight, how much would you expect her to weigh in 3 years from now?
- (A) 60 lbs
(B) 54 lbs
(C) 63 lbs
(D) 3 lbs

3. Simplify this expression.

$$14n + 9 - 8n + 29x$$

- Ⓐ $44nx$
- Ⓑ $15n + 29x$
- Ⓒ $6n + 29x + 9$
- Ⓓ $35nx + 9$

4. 0.4% of the 2,500 drivers in a small town own more than four cars. How many drivers in this town own more than four cars?

- Ⓐ 10
- Ⓑ 100
- Ⓒ 25
- Ⓓ 1,000

5. William traveled a distance of 60 miles at a rate of 40 miles per hour. How long did the trip take?

- Ⓐ 120 minutes
- Ⓑ 90 minutes
- Ⓒ 60 minutes
- Ⓓ 40 minutes

6. $4 \cdot 6 + 24 \div 2 =$

- Ⓐ 24
- Ⓑ 36
- Ⓒ 45
- Ⓓ 60

7. Juan can plant 6 fruit trees in a half hour. His partner can plant 3 nut trees in a quarter hour. About how many trees can the team plant after 8 hours at work?

- Ⓐ 24
- Ⓑ 80
- Ⓒ 96
- Ⓓ 192

8. Over the summer you earn \$1000 baby sitting. You invest the entire amount in an account earning 8% interest. How much will be in your account in a year's time?
- Ⓐ \$3
 - Ⓑ \$80
 - Ⓒ \$1000
 - Ⓓ \$1,080
9. A botanist is checking the progress of her plant. Today it is 7cm tall. Based on her measurements, the plant grows $\frac{3}{4}$ cm per day. How tall does she expect the plant to be in three days?
- Ⓐ $9\frac{1}{4}$ cm
 - Ⓑ 7 cm
 - Ⓒ $4\frac{3}{4}$ cm
 - Ⓓ $2\frac{1}{4}$ cm
10. Mark knows how to bargain shop. How much will he pay for a pair of shoes listed for \$85 that are on sale for 40% off, if he has an additional coupon for 20% savings taken at the register on top of all other bargains?
- Ⓐ \$44.20
 - Ⓑ \$51
 - Ⓒ \$40.80
 - Ⓓ \$27.20
11. Kerry is starting a construction business. She buys a truck that costs \$10,000 used. She hires 2 workers to help and pays each \$125 per day. The materials for three projects cost \$2,500. The jobs will each take a week not including Saturday and Sunday. What is the minimum Kerry would have to charge each job in order to break even on the three projects?
- Ⓐ \$13,750
 - Ⓑ 4,584
 - Ⓒ 4,375
 - Ⓓ 4,250
12. What is the circumference of a circular pathway with a diameter of 42m?
- Ⓐ 263.76 m
 - Ⓑ 13.38 m
 - Ⓒ 131.88 m
 - Ⓓ 5,538.96 m

13. $n^4 \cdot n^5 \cdot n^2 =$

- Ⓐ n^9
- Ⓑ n^{10}
- Ⓒ n^{11}
- Ⓓ n^{40}

14. A real estate agent sells a house for \$430,000. How much does she earn from a 6% commission after she gives 20% to the company to cover office and advertising costs?

- Ⓐ \$20,640
- Ⓑ \$25,800
- Ⓒ \$5,160
- Ⓓ \$2,580

15. On a science test, the highest grade in class was 33 points higher than the lowest grade. If the sum of the two grades was 148, what was the lowest grade?

- Ⓐ 67.5
- Ⓑ 84
- Ⓒ 57.5
- Ⓓ 42

Questions 16 and 17 are short constructed response questions.

- Carefully read each problem before writing your answer.

16. The number of students graduating from Long Valley High School in 2008 was 360. The next year, 378 students graduated. By what percent did the number of graduates increase from 2008 to 2009?

17. The number -1.5 was multiplied by another number, x , and the resulting product was 1. What is the value of x ?

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.

Farmer Johnson wants to put up a new fence on his property. He wants to enclose a rectangular plot with an area of 144 square yards.

Sketch and label three different plots that would fit the description noted above.

Of the three choices, which one would require the least amount of fence material? Support your answer.

Part B



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

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18. At the end of the day, a scientist found she has $\frac{4}{3}$ as many samples of Antarctic krill as she had for California copepods. She had a total of 84 samples. How many samples of copepods did she have?

- Ⓐ 84
- Ⓑ 36
- Ⓒ 42
- Ⓓ 46

19. Simplify the given expression. $9(4x + 10)$

- Ⓐ $126x$
- Ⓑ $36x + 10$
- Ⓒ $36x + 90$
- Ⓓ $136x$

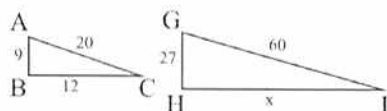
20. Examine the table of the cost of peaches:

Number of peaches	Cost for the peaches
0	0
5	\$0.25
10	\$0.50
15	\$0.75
20	\$1.00

How do you know if this relationship is proportional?

- Ⓐ The ratio of peaches to prices are equivalent.
- Ⓑ The table can be rewritten as a diagram.
- Ⓒ A graph of the data will be a vertical line.
- Ⓓ A graph of the data will be a horizontal line.

21. Triangle ABC and Triangle GHI are drawn in a 1:3 scale. Find the value of x .



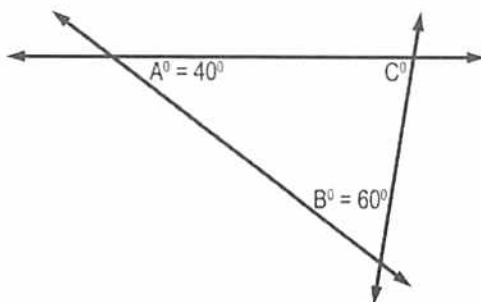
- Ⓐ $x = 4$
- Ⓑ $x = 12$
- Ⓒ $x = 24$
- Ⓓ $x = 36$

22. A shoebox has a length of 14 inches, a height of 8 inches, and a width of 10 inches. What is the volume of the shoebox (in cubic inches)?

- Ⓐ 1,120 cu. in.
- Ⓑ 140 cu. in.
- Ⓒ 112 cu. in.
- Ⓓ 80 cu. in.

23. A circular glass tabletop has a diameter of 3.5 feet. What is the circumference of the tabletop? (Use $\pi = 3.14$)
- Ⓐ 10.99 ft.
 - Ⓑ 11.79 ft.
 - Ⓒ 9.84 ft.
 - Ⓓ 7.0 ft.
24. The triangular sail on a boat has a base of 14 feet and, when fully unraveled, has a vertical height of 30 feet. What is the area of this sail?
- Ⓐ 420 square feet
 - Ⓑ 340 square feet
 - Ⓒ 210 square feet
 - Ⓓ 180 square feet
25. A game requires rolling a six-sided cube, numbered 1 through 6. Jose wants to know the probability of rolling an even number twice in a row. What is the sample space for this event?
- Ⓐ $\frac{1}{4}$
 - Ⓑ $\frac{1}{2}$
 - Ⓒ {2, 4, 6}
 - Ⓓ {1, 2, 3, 4, 5, 6}
26. Lisa has 3 purple pens, 6 black pens, and 10 blue pens in her backpack. If she reaches into her backpack without looking, what is the probability that she will pull out a purple pen?
- Ⓐ $\frac{3}{19}$
 - Ⓑ $\frac{1}{16}$
 - Ⓒ $\frac{3}{16}$
 - Ⓓ $\frac{1}{3}$

27. Examine the following figure:



Which of the following is the most likely measure of the external angle adjacent to angle C ?

- Ⓐ 80
- Ⓑ 100
- Ⓒ 60
- Ⓓ 40

Questions 28 and 29 are short constructed response questions.

- Carefully read each problem before writing your answer.

28. John has a bag of yellow, blue, red, and green marbles. The probability of picking a yellow marble is one fifth, and it is two times as likely to pick a blue marble. What is the probability of picking a marble that is not yellow nor blue?

29. A large floor is being covered with tiles that each measure 6 inches by 6 inches. The floor is 12 feet long and 14 feet wide. How many tiles will be needed to cover the floor?

Extended Constructed Response 2

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

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- 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.

A group of hikers is climbing a 6,500 foot mountain slope. They are now at a point 2,100 feet from the base of the mountain. They have maintained a climbing rate of 700 feet per hour. Assuming they can maintain the same rate, write an expression that would represent their height up the mountain slope after t hours of additional climbing. Let $t=0$ represent the time at which they reached 2,100 feet.

From the point where they are now, how long will it take the group to reach the top of the mountain? Explain how you know.

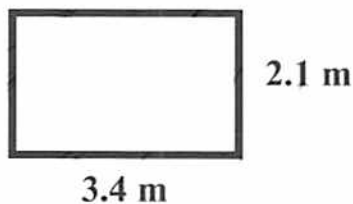
Part C

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



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30. A landscaper measures two sides of the following garden:



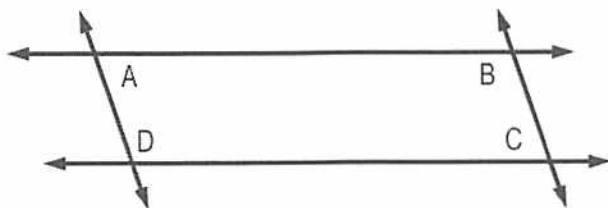
Find the area of this garden.

- Ⓐ 5.5 sq. m
 - Ⓑ 7.14 sq. m
 - Ⓒ 7.53 sq. m
 - Ⓓ 11.0 sq. m
31. A student is measuring the volume of a liquid in a graduated cylinder. He measures three times and gets the results: 65mL, 62mL, 65mL. He trusts the measurement that repeats. What was his percent error in the second measurement?
- Ⓐ 65%
 - Ⓑ 62%
 - Ⓒ 4.6%
 - Ⓓ 3%

32. Samantha rolled a die and wanted to get either a 2 or 3. Mike rolled two dice, one red and one green, and wanted to get both a 2 and a 3, at the same time. How many possible outcomes do Samantha and Mike have?

- Ⓐ Samantha has 2, Mike has 12
- Ⓑ Samantha has 6, Mike has 36
- Ⓒ Samantha has 1, Mike has 2
- Ⓓ Samantha has 2, Mike has 24

33. Examine the figure showing two pairs of parallel lines.



Which of the following angles is/are supplementary to Angle C?

- Ⓐ Angle A only
- Ⓑ Angle B only
- Ⓒ Angles A and D
- Ⓓ Angles B and D

34. Simplify the following expression:

$$9(x + 6) - x + 4$$

- Ⓐ $53x + 4$
- Ⓑ $62x + 4$
- Ⓒ $8x + 58$
- Ⓓ $8x + 50$

35. Jerry is planning a trip. He decides to take the following clothing:

- 2 pairs of pants
- 1 pair of cufflings
- 3 shirts
- 2 pairs of shoes

How many combinations of outfits can he put together while on the trip?

- Ⓐ 2
- Ⓑ 3
- Ⓒ 6
- Ⓓ 12

36. A 250-gallon above-ground tank is slowly leaking water through a crack in one of its sides. The amount of water (A , in gallons) that leaks out of the tank over a period of t hours can be found using $A = 2.5(t)$. If the tank was filled to the top at 8 AM, how much water would remain in the tank at 6 PM? Assume the rate of leaking remained constant and no additional water was lost through any other means.

- Ⓐ 240 gallons
- Ⓑ 225 gallons
- Ⓒ 25 gallons
- Ⓓ 0 gallons (The tank would be empty.)

37. Janet decides to bring three pairs of pants (black, white, and green), four shirts (green, white, purple, and yellow), and two pairs of shoes (black and white) on a holiday trip.

What is the probability that her pants and shoes will match?

- Ⓐ 24
- Ⓑ 9
- Ⓒ $\frac{1}{2}$
- Ⓓ $\frac{1}{3}$

38. Which of the following events has the greatest probability of happening?

- Ⓐ Rolling a 4 on a single number cube (die)
- Ⓑ Flipping a dime and having it land on Heads
- Ⓒ Picking an Ace from a standard deck of playing cards
- Ⓓ Rolling a sum greater than 9 on two number cubes (dice)

39. Which formula would best be used to find the diameter of a circle?

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

Questions 40 and 41 are short constructed response questions.

- Carefully read each problem before writing your answer.

40. Joy's Music World is having a sale: Buy 2 CD's at \$12.00 each, and get a 3rd CD at half price. Paul has finished shopping around the store and he walks up to the cash register with 9 CD's. How much will he have to pay? Assume there is no tax.

41. Evaluate the following expression:

$$[36 - (15 + 1)] \div 20 + 4 \cdot (-10 - 5)$$

Extended Constructed Response 3

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

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- Be sure to complete all parts of the task.
- Clearly explain your answer and show all your work.
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- You may use a calculator and a ruler for this task.

Patricia is designing a game of chance for a math fair. She wants to put a mixture of five different colored marbles into a bag. The marbles will be red, green, yellow, white, or blue. She wants to set up the mixture so that a red marble would have a 25% chance of being chosen, green and yellow combined would have a 40% chance of being chosen, and white would have a greater chance than blue of being chosen.

Write a combination of marbles that Patricia could use in her game. Be sure all of the above criteria are met.

Support your answer.