

Hayden Middle School Math Tournament
5th Grade 2019

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

Simplify the expression.

1) $[39 - (4 + 6) \div 2] - [1 + 9 \div 3]$ 1) _____
A) 30 B) 25 C) 37 D) 27

2) A mechanic uses an average $\frac{5}{2}$ gallon gear lube to service each tractor differential. Find the number of tractors that can be serviced with 30 gallons of gear lube. 2) _____
A) 75 tractors B) 150 tractors C) 6 tractors D) 12 tractors

3) A window washing company quotes your business a price of \$1.5 per square foot to wash all your windows. If you have 10 square windows all measuring 7 feet on a side, how much will this service cost? 3) _____
A) \$514.5 B) \$21 C) \$157.5 D) \$735

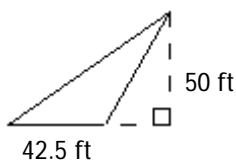
4) An industrial saw cut 0.5 centimeters from a piece of steel $8\frac{3}{8}$ centimeters thick. How thick was the steel after the cut? Express your answer in decimal notation. 4) _____
A) 8.875 centimeters B) 2.5 centimeters
C) 66.5 centimeters D) 7.875 centimeters

5) A layer of paint on a piece of wood has a thickness of $\frac{1}{12}$ inch. The thickness of the piece of wood is $\frac{1}{3}$ inch. What is the total thickness of the wood and the paint? 5) _____
A) $\frac{5}{12}$ inch B) $\frac{2}{15}$ inch C) $\frac{1}{6}$ inch D) $\frac{5}{3}$ inches

Find the indicated unit rate.

6) Pedro and Martin are painting a house. Pedro painted 1755 square feet of wall in 9 hours. Martin painted 1600 square feet of wall in 8 hours. Who painted faster? Give the unit rate in square feet per hour for the person who painted faster. 6) _____
A) Martin; 200 square feet per hour B) Pedro; 195 square feet per hour
C) Pedro; 200 square feet per hour D) Martin; 195 square feet per hour

7) Calculate the area of the triangle. 7) _____



42.5 ft
A) 1062.5 square feet B) 1375 square feet
C) 1250 square feet D) 2125 square feet

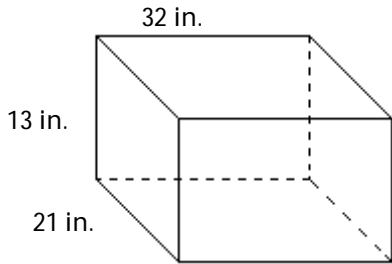
8) A physician prescribes 2 grams of an antibiotic per day. How many 500 milligram tablets would have to be taken in order to achieve this daily dosage?

- A) 10 tablets B) 4 tablets C) 2.5 tablets D) 1 tablets

8) _____

Find the volume.

9)



- A) 9856 in.³ B) 672 in.³ C) 8736 in.³ D) 416 in.³

9) _____

Write an equation to represent the situation. Then, solve the equation.

10) A parking garage charges \$278.00 for the first hour or part thereof. Each additional hour or part thereof costs \$681.00. If Joey has exactly \$3683.00 to spend on parking, how many hours can he park in this lot?

- A) $278.00 + 681.00(h - 1) = 3683.00$; 5 hours B) $278.00 + 681.00h = 3683.00$; 6.5 hours
C) $278.00 + 681.00h = 3683.00$; 5.5 hours D) $278.00 + 681.00(h - 1) = 3683.00$; 6 hours

10) _____

11) The expression $-16(t)^2 + 80(t)$, gives the location of an object launched upward from a particular point with a speed of 80-feet-per-second. How far above or below that point will the object be after 3 seconds?

- A) 384 feet below the point B) 384 feet above the point
C) 96 feet below the point D) 96 feet above the point

11) _____

12) The area of a rectangular window is to be 1505 square inches. To fit into a wall, it must be 35 inches wide. How tall can it be?

- A) 45 inches B) 42 inches C) 43 inches D) 35 inches

12) _____

13) The scores for a statistics test are as follows:

81 76 76 77 63 92 62 85 61 89
79 86 50 82 85 77 85 71 18 84

What is the mode of these scores?

- A) 76 B) 18 C) 85 D) 89

13) _____

14) A jug contains 16 liters of lemonade. How many 320 milliliter servings are in one jug?

- A) 5120 servings B) 50 servings C) 5 servings D) 500 servings

14) _____

Solve the problem.

15) Alex and Juana went on a 20-mile canoe trip with their class. On the first day they traveled 13 miles. What percent of the total distance did they canoe?

- A) 200% B) 2% C) 0.65% D) 65%

15) _____

- 16) A restaurant serves 8 fluid ounces of soup to each customer. How many quarts of soup should be prepared in order to serve 85 customers? 16) _____
- A) $22\frac{1}{4}$ quarts B) $23\frac{1}{4}$ quarts C) $21\frac{1}{4}$ quarts D) $42\frac{1}{2}$ quarts

Convert the measurement to the specified units. Round to the nearest tenth of a degree, when necessary.

- 17) Mario is planning what to wear on a hiking trip tomorrow. A weather forecast predicts a high temperature of 66°F in the area which he will be visiting. Find this temperature in degrees Celsius. 17) _____
- A) 150.8° Celsius B) 4.7° Celsius C) 86.8° Celsius D) 18.9° Celsius

- 18) A dishwasher sells for \$832 and is subject to a sales tax of 8.1%. What is the total purchase price of the dishwasher? 18) _____
- A) \$673.92 B) \$1505.92 C) \$899.39 D) \$67.39

- 19) Sales of frozen pizza for a club fund-raiser changed from 500 one year to 660 the next year. What was the percent change in pizza sales? 19) _____
- A) 68% increase in sales B) 24.2% decrease in sales
C) 75.8% decrease in sales D) 32% increase in sales

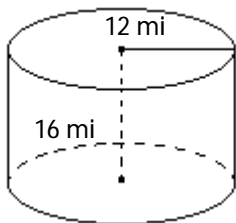
- 20) Ron is expecting to make the following grades this term. Calculate his GPA if he is right. Round to the nearest hundredth. 20) _____

Course	Credits	Grade Value
Music	2	A
Calculus	6	C
Chemistry	3	A
Chemistry Lab	2	A
Philosophy	3	B

A) 2.06 B) 4.06 C) 3.06 D) 9.8

Find the volume of the solid. Use 3.14 for π . Round to the nearest hundredth, if necessary.

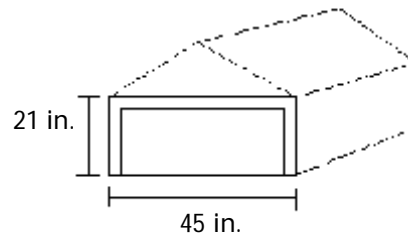
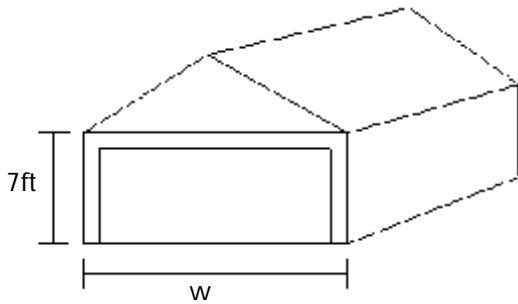
- 21) 21) _____



- A) 7234.56 mi^3 B) $14,469.12 \text{ mi}^3$
C) 1205.76 mi^3 D) 602.88 mi^3

22) An architect is using the concept of similar geometric figures and a small prototype model (shown on the right below) to design a cottage. For both the model and the actual cottage, the ratio of the height to the width (excluding the roof) is 21 to 45. If the height of the actual cottage is 7 feet, what is its width, w ?

22) _____



A) 21 feet

B) 15 feet

C) 45 feet

D) 30 feet

23) Steve's favorite juice comes in three sizes. The prices are shown in the table below. Which size is the best buy? Give the unit price of the best buy. Round to the nearest cent.

23) _____

SIZE	PRICE	UNIT PRICE
12 ounces	\$1.35	
16 ounces	\$1.59	
24 ounces	\$2.61	

A) 24 ounces at \$9.19 per ounce

B) 12 ounces at \$0.11 per ounce

C) 24 ounces at \$0.11 per ounce

D) 16 ounces at \$0.10 per ounce

24) One of 15 initial applicants for a certain job will receive a first interview. Of those who receive a first interview, one of 11 will receive a second interview. What fraction of initial applicants will receive a second interview?

24) _____

A) $\frac{2}{165}$

B) $\frac{1}{26}$

C) $\frac{1}{165}$

D) $\frac{2}{26}$

25) You are planning a driving vacation, and you want to estimate the cost of the gas. While on vacation, you are planning to drive 3000 miles. Your car gets about 30 miles per gallon, and you estimate that the cost of gas is \$1.99 per gallon. What is your estimate for the cost of the gasoline for the the vacation?

25) _____

A) \$244.77

B) \$159.20

C) \$199.00

D) \$248.75

Answer Key

Testname: HAYDEN MIDDLE 5TH GRADE 2019

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