TEST NAME: **IPS Grade 7 Math Summer Packet 2017-2018**
TEST ID: **192673**
GRADE: **Grade 7**
SUBJECT: **Mathematics**
TEST CATEGORY: **District Benchmark (reports in KPI)**

Student: _____

Class: _____

Date: _____

1. Which expressions are equivalent to 6 - 4.5 + (-8) ?

   Select **each** correct answer.

   A. 6 + 4.5 + 8

   B. 6 + 4.5 - 8

   C. 6 - 4.5 + 8

   D. 6 - 4.5 - 8

   E. 6 + (- 4.5) - 8

   F. 6 + (- 4.5) + (- 8)

   G. 6 + (- 4.5) - (- 8)

2. What is the value of $\left(-\frac{1}{4}-\frac{1}{2}\right)\div\left(-\frac{4}{7}\right)$?

   A. $-1\frac{5}{16}$

   B. $-\frac{3}{7}$

   C. $\frac{3}{7}$

   D. $1\frac{5}{16}$

3. Yesterday, the temperature at noon was 11.4°F. By midnight, the temperature had decreased by 15.7 degrees. What was the temperature at midnight?

   A. −4.3°F

   B. −11.4°F

   C. −15.7°F

   D. −27.1°F

4. The table shows the costs of items at a refreshment stand.

Refreshment Stand Item Costs

Item	Cost
apple	$0.75
bag of popcorn	$1.00
bottle of water	$1.50
hot chocolate	$0.50
pretzel	$1.25

Complete each of the following 2 activities (A - B) for Question 4.

4A. Marc and Barb buy 2 apples, 1 bottle of water, 1 hot chocolate, and 2 pretzels. What is the total cost for these items? Show or explain your work.

4B. The total amount of money earned from the sale of items at the refreshment stand last night was $443.00. Last night, 40 apples, 78 bags of popcorn, 128 bottles of water, and 96 hot chocolates were sold. How many pretzels were sold? Show or explain your work.

5. A recipe requires $\frac{1}{3}$ cup of milk for each $\frac{1}{4}$ cup of water. How many cups of water are needed for each cup of milk?

A. $\frac{1}{12}$

B. $\frac{3}{4}$

C. $\frac{11}{12}$

D. $1\frac{1}{3}$

6. The table shows a proportional relationship between the number of pounds of grapes purchased and the total cost of the grapes.

Grapes

Number of Pounds	Total Cost (dollars)
4	2.76
7	4.83
9	6.21

A row of values is missing in the table.

Which number of pounds of grapes and total cost of the grapes could be used as the missing values in the table?

Select **each** correct response.

A. Pounds of grapes: 2
   Total cost: $1.38

B. Pounds of grapes: 3
   Total cost: $2.53

C. Pounds of grapes: 6
   Total cost: $3.68

D. Pounds of grapes: 8
   Total cost: $5.52

E. Pounds of grapes: 11
   Total cost: $8.97

7. A worker has to drive her car as part of her job. She receives money from her company to pay for the gas she uses. The table shows a proportional relationship between y, the amount of money that the worker receives, and x, the number of work-related miles driven.

Mileage Rates

Distance Driven, x (miles)	Amount of Money Received, y (dollars)
25	12.75
35	17.85
40	20.40
50	25.50

Part A

Explain how to compute the amount of money the worker receives for any number of work-related miles. Based on your explanation, write an equation that can be used to determine the total amount of money, y, the worker receives for driving x work-related miles.

Enter your explanation and your equation in the space provided.

Part B

On Monday, the worker drove a total of 134 work-related and personal miles. She received $32.13 for the work-related miles she drove on Monday. What was the number of **personal miles** driven on Monday? Show or explain how you arrived at your answer.

Enter your answer and your work or explanation in the space provided.

8. Appliances at Discount City Store are on sale for 70% of the original price. Eli has a coupon for an 18% discount on the sale price. If the original price of a microwave oven is $500, how much will Eli pay for the oven before tax?

A. $440

B. $287

C. $260

D. $240

9. Use the expression below to answer the question. 20 + 8y – 9y – 21
Which expression is equivalent?

A. 2(10 + 4y – 7y – 19)

B. 2(10 + 4y) – 3(3y – 7)

C. 4(5 + 2y – 5y – 17)

D. 4(5 + 2y) – 3(3y + 7)

10. .

Complete each of the following 2 activities (A - B) for Question 10.

10A. A pair of jeans costs x dollars and is subject to 7% sales tax.

Select an expression that represents the amount of tax that must be paid.

A. $7x$

B. 0.07

C. $0.07x$

D. 7

10B. A pair of jeans costs x dollars and is subject to 7% sales tax. The customer must pay for the jeans plus the sales tax.

Which of the following expressions could be used to find the final cost of the pair of jeans, in dollars?

A. $0.07x$

B. $1.07x$

C. $x + 7x$

D. $1 + 0.07x$

11. A scientist uses a submarine to study ocean life.

- She begins at sea level, which is at an elevation of 0 feet.
- She travels straight down for 90 seconds at a speed of 3.5 feet per second.
- She then travels directly up for 30 seconds at a speed of 2.2 feet per second.

After this 120-second period, how much time, in seconds, will it take for the scientist to travel back to sea level at the submarine's maximum speed of 4.8 feet per second? Round your answer to the nearest tenth of a second.

Show your work.

Answer _____ seconds

12.

Michael paid a total of $48 for 4 pizzas. He used a coupon for $4 off the entire order. The equation below can be used to determine the regular price of 1 pizza, p.

4p – 4 = 48

What is the regular price of 1 pizza?

A. $11

B. $12

C. $13

D. $16

13. Raymond took a survey of classmates to determine the favorite subject of the students in his middle school. The results of his survey are shown in the table.

Raymond's Survey Results

Subject	Number of Votes
English	9
Math	17
Science	13
Social Studies	11

There are 300 students in Raymond's middle school. Based on his results, approximately how many students in his school would be expected to choose math as their favorite subject?

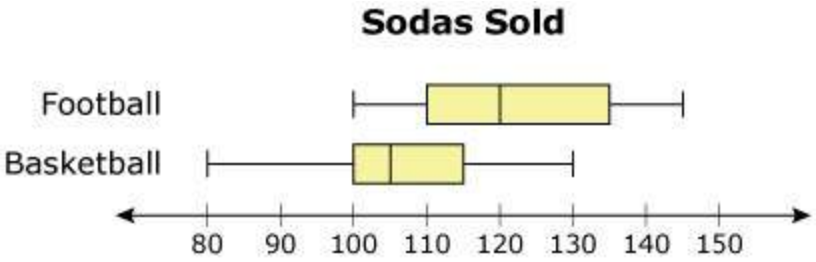
A. 17

B. 100

C. 102

D. 170

14. Barry kept track of the numbers of sodas sold during each of his school's basketball and football games last year. He used the results to make the box-and-whisker plots shown below.



How does the range of sodas sold during football games compare to the range of sodas sold during basketball games?

A. The range of sodas sold is about 5 more for football games than for basketball games.

B. The range of sodas sold is about 5 less for football games than for basketball games.

C. The range of sodas sold is about 10 more for football games than for basketball games.

D. The range of sodas sold is about 15 more for football games than for basketball games.

15. A bag holds 20 balls. Ten of the balls are orange and ten are white. One orange ball has an X on it, and one white ball has an X on it. If a ball is randomly selected from the bag, what is the probability that it has an X on it?

A. $\frac{1}{20}$

B. $\frac{1}{10}$

C. $\frac{1}{5}$

D. $\frac{1}{2}$

16. Javier is building a model of the USS *Tennessee* submarine which is 560 feet in length. If he uses a scale where 1 inch represents 20 feet, what should be the length of his model?

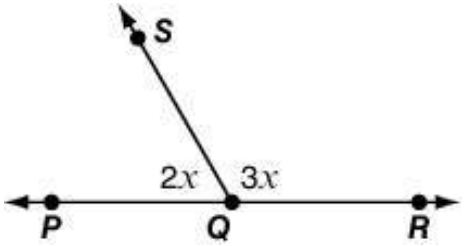
A. 112 inches

B. 56 inches

C. 36 inches

D. 28 inches

17. What is the $m\angle PQS$ in the figure below?



A. 36°

B. 60°

C. 72°

D. 108°

18. Joe made a model of a door out of a piece of cardboard. The amount of cardboard used for the square, bottom portion of the model is shown in the diagram below.

Approximately how much cardboard did he use in all to make the model?

A. 828 square inches

B. 1,092 square inches

C. 1,400 square inches

D. 2,016 square inches