College Prep Math **Name:** _____
TSIA2 Practice Test 2

Quantitative Reasoning:

includes calculating ratios, proportions, and percents, as well as identifying, manipulating, and interpreting linear equations and expressions.

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1. Olga has 6 bushels of wheat. She wants to pour all of the wheat into containers that each hold 1 peck. How many containers will she need? (4 pecks = 1 bushel)

A. 24
B. 20
C. 8
D. 4

2. A certain map has a scale in which $\frac{1}{2}$ cm on the map represents an actual distance of 10 km.
A distance of x kilometers is represented by how many centimeters on this map?

A. $\frac{x}{20}$
B. $\frac{x}{10}$
C. 5x
D. 20x

3. Robbie bought 7 pencils from a bookstore. Some of the pencils cost $3 each, and the rest cost $4 each. If she paid a total of $23 for the pencils, how many of the $3 pencils did she buy?

A. Two
B. Three
C. Four
D. Five

4. If the price of 7 bananas is $1.12, what is the price of 18 bananas?

A. $1.14
B. $2.88
C. $3.16
D. $4.12

5. There are exactly 40 toys in a box. If x toys are removed, which of the following expressions represents the number of toys left in the box?

A. $\frac{40}{x}$
B. 40x
C. x - 40
D. 40 - x

Algebraic Reasoning:

includes solving equations (linear, quadratic, polynomial,exponential, rational, and radical), evaluating functions, and solving algebraic problems in context.

6. If 4x + 7 = 10, what is the value of x?

A. 4/17
B. 4/3
C. 3/4
D. 17/4

7. If 3A + B + 4 - (B + 6) = 14 + A, what is the value of A?

A. 4
B. 8
C. 12
D. 16

8. Which of the following is NOT equivalent to 24b - 12?

A. 2(12b - 12)
B. 2(12b - 6)
C. 4(6b - 3)
D. 12(2b - 1)

9. Which of the following is equivalent to $x^2 + 3x - 10$?

A. (x - 5)(x - 2)
B. (x + 5)(x + 2)
C. (x - 5)(x + 2)
D. (x + 5)(x - 2)

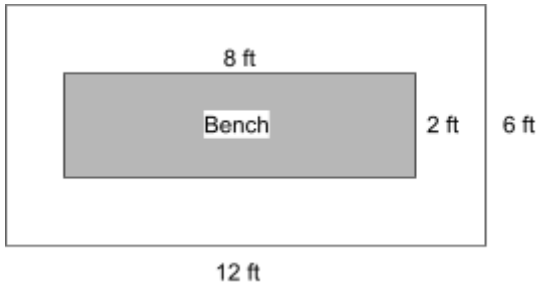
10. If $g(x) = 10^x$, then for what value of x does g(x) = 10,000,000?

A. 3
B. 5
C. 7
D. 9

Geometric and Spatial Reasoning:

includes converting units within measurement systems, solving geometric problems (perimeter, area, surface area, and volume), performing transformations, and applying right triangle trigonometry.

11. A restaurant is building a rectangular deck around a rectangular bench.
According to the diagram below, what is the area of the deck NOT covered by the bench?



A. 16 sq ft
B. 42 sq ft
C. 56 sq ft
D. 72 sq ft

12. Tim has a square table with sides of length 6 feet. He can enlarge it to a rectangular table which increases the length by 3 feet and the width by 2 feet. How much bigger in square feet will the new table be compared to the old table?

A. 12
B. 36
C. 48
D. 72

13. If the length L of a rectangle is 4 less than twice the width W, which of the following gives the length of the rectangle in terms of the width?

A. L = 4 - 2W
B. L = 2W - 4
C. L = 4W - 2
D. L = 2 - 4W

14. A square has an area of 49 cm^2. What is the perimeter of the square?

A. 28 cm
B. 14 cm
C. 36 cm
D. 196 cm

15. A rectangular swimming pool is x yards wide. The length of the swimming pool is twice as long as the width. If the perimeter of the pool is 128 yards, which of the following equations represents the given information?

A. x + x + 2x + 2x = 128
B. x + 2x = 128
C. x + 2 + x + 2 = 128
D. 2x + 2x + 2x + 2x = 128

Probabilistic and Statistical Reasoning:

includes classifying data, constructing appropriate representations of data, computing and interpreting probability, and describing measures of center and spread of data.

16. The following are scores for 5 students in Ms. Goldman's history class.

541 461 776 671 399 687

What is the range of the scores?

A. 219
B. 298
C. 377
D. 623

17. Students in Ms. Frost's science class used scales to measure the mass, in grams, of a solid. The mass of the solid was reported as 4.2 grams, 4.8 grams, 5.2 grams, 7.9 grams, and 5.3 grams. Of the following, which measure would best estimate the true mass of the solid?

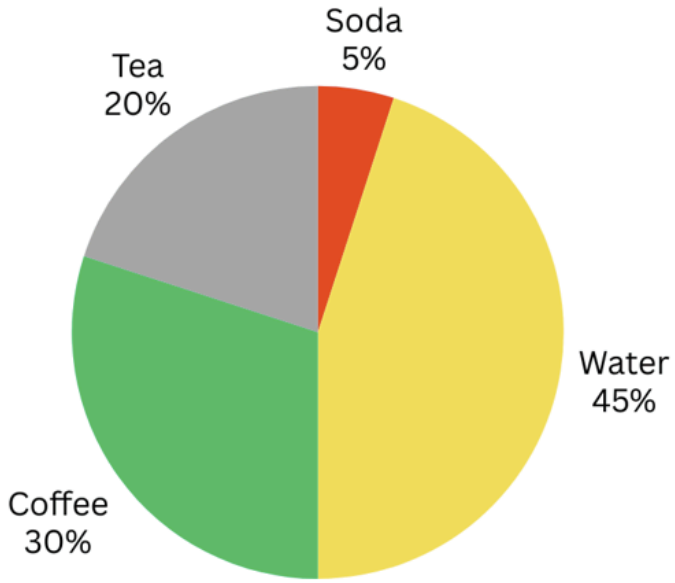
A. Minimum
B. Maximum
C. Mode
D. Mean

18. The distance that Kim walked for each of 5 days is shown in the table.
What was the average distance that Kim walked per day?

Monday	4 miles
Tuesday	5 miles
Wednesday	3 miles
Thursday	6 miles
Friday	6 miles

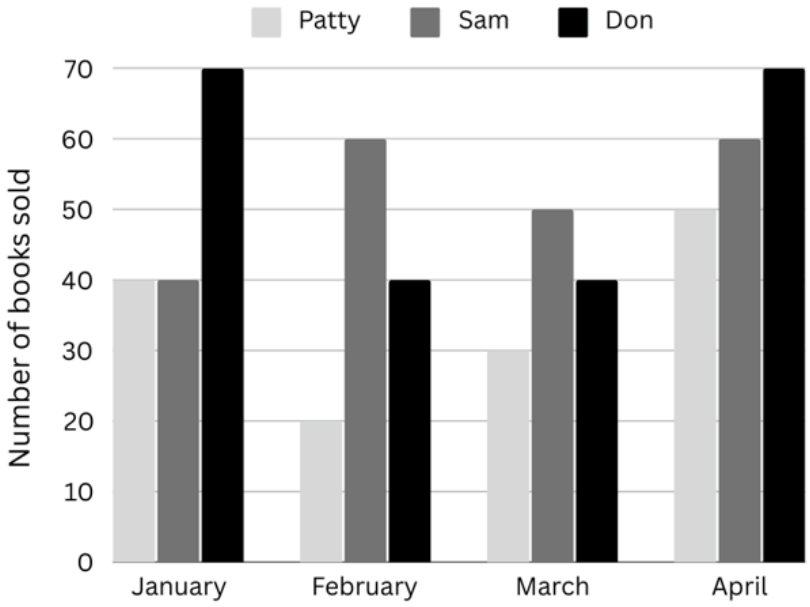
A. 4.0 miles
B. 4.8 miles
C. 5.2 miles
D. 6.0 miles

19. The circle graph gives the distribution of drinks by customers at a restaurant. If approximately 200 customers order a drink each day at the restaurant, which of the following is closest to the difference per day between the number who choose coffee and the number who choose water?



A. 10
B. 20
C. 25
D. 30

20. The number of books sold per month by three salespeople for four different months is shown in the given graph. Based on the graph, which of the following is a true statement?



A. The average number of books sold by the three salespeople in April was 60 books.
B. The average number of books sold by the three salespeople in January was 60 books.
C. The average number of books sold by the three salespeople in February was 50 books.
D. The average number of books sold by the three salespeople in March was greater than the average number of books sold by the three salespeople in February.