2018 TAME Middle School Practice State Mathematics Test

(1) Noah bowled five games. He predicts the score of the next game he bowls will be 120. Which list most likely shows the scores of Kent's first five games?
A) 95, 102, 128, 112, 103
B) 104, 187, 168, 154, 173
C) 120, 149, 157, 136, 162
D) 114, 115, 127, 116, 128

(2) If 991 + 993 + 995 + 997 + 999 = 5000 – Q, then Q equals what number?
A) 10 B) 15 C) 20 D) 25

(3) A cube with an edge of 3 cm is cut into *N* smaller cubes, not all the same size. If the edge of each of the smaller cubes is a whole number of centimeters, then what is *N*?
A) 20 B) 12 C) 6 D) 4

(4) The Cavazos Middle School band has 100 female and 80 male members. The Cavazos Middle School orchestra has 80 females and 100 male members. There are 60 females who are members in both band and orchestra. Altogether, there are 230 students who are in either band or orchestra or both. How many males in the band are not in the orchestra?
A) 10 B) 20 C) 40 D) 70

(5) The arithmetic mean of 10 different positive whole numbers is 10. What is the largest possible value of any of these numbers?
A) 45 B) 50 C) 55 D) 90

(6) There are several sets of three different numbers whose sum is 15 which can be chosen from the set {1, 2, 3, 4, 5, 6, 7, 8, 9}. How many of these sets contain a five?
A) 7 B) 6 C) 5 D) 4

For problems 7 – 9, please use the chart below.

For three days a waitress counted the number of different drinks she served and put the results in a pie chart, as shown below.

(7) If a total of 200 patrons were served, how many drank water and tea?
A) 30
B) 42
C) 100
D) 160

(8) If a total of 200 patrons were served, how many more drank soft drinks than milk?
A) 6
B) 12
C) 30
D) 60

(9) If a total of 200 patrons were served, how many more drinks were served that could contain caffeine?
A) 16
B) 32
C) 84
D) 116

(10) Andy has a $1\frac{1}{2}$ gallon bucket to hold water. If he uses a 1-cup measuring container to fill the bucket, how many times will he completely fill his 1-cup container in filling up his bucket?
A) 16 B) 18 C) 24 D) 48

(11) The values for the equation $y = 3x - 1$ are given in the table below. Which statement concerning the table is true?

x	y
1	2
2	5
3	8
4	11

A) The independent variable is increasing by 1.
B) The independent variable is increasing by 3.
C) The dependent variable is decreasing by 3.
D) The value of the independent variable is twice the value of the dependent variable.

(12) What is the least common multiple of the algebraic expressions: $8x^3y^2$, $12x^4y^3$, $16x^3y^3$?
A) $4x^3y^2$ B) $8x^3y^2$ C) $48x^4y^3$ D) $4xy^2$

(13) A red, a white, and a blue jelly bean are in a cup. Three students each draw one jelly bean from the cup, without replacing it. What is the theoretical probability of drawing a red jelly bean first, a white second, and a blue third?
A) $\frac{1}{5}$ B) $\frac{1}{6}$ C) $\frac{1}{3}$ D) $\frac{1}{2}$

(14) A parking lot holds 64 cars. The parking lot is seven-eighths filled. How many spaces remain in the lot?
A) 6 B) 8 C) 16 D) 48

(15) If 10 workers assemble 30 television sets in 8 hours, how many television sets will 40 workers assemble in 4 hours, if they all work at the same rate?
A) 32 B) 45 C) 60 D) 80

(16) Two bicyclists met at the intersection of two straight flat roads. They left at the same time. One headed north at 27 kilometers per hour. The other headed east. Twenty minutes later, they were 15 kilometers apart. How fast was the second bicyclist going?
A) 12 km/h B) 36 km/h C) 39 km/h D) 50 km/h

(17) Over the course of a year, my cat's weight went from 10 pounds to 18 pounds. What is the percent increase in my cat's weight?
A) 44% B) 60% C) 80% D) 180%

(18) My old vacuum cleaner only picks up 80% of the dirt each time it goes over a rug. If I run the vacuum cleaner over the rug twice, what percent of the dirt remains?
A) 0.4% B) 4% C) 10% D) 40%

(19) Evaluate $\frac{4^{150}}{2^{150}}$.

A) 2^{150} B) 2^{75} C) 4^{75} D) 2

(20) What is the closest estimate of the area of this sheet of paper?

A) 60 square centimeters
B) 6 square decimeters
C) 0.6 square meters
D) 6 square centimeters

(21) A bicycle rider climbs a slope at the rate of 50 meters per minute. She descends the same slope at 150 meters per minute. If the round trip takes 24 minutes, how long is the slope?

A) 100 meters B) 200 meters C) 900 meters D) 3600 meters

(22) A snowman is built with three spheres made of packed snow. The top sphere has half the diameter of the middle sphere. The middle sphere has half the diameter of the bottom sphere. The top sphere weighs 5 pounds. What is the total weight of the snowman?

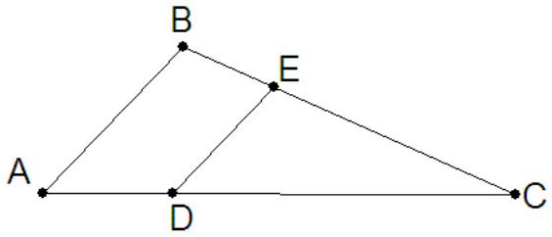
A) 30 pounds B) 65 pounds C) 250 pounds D) 365 pounds

(23) Which of the following statements is false?

A) Any two circles are similar figures.
B) Any two squares are similar figures.
C) Any two rectangles are similar figures.
D) Any two spheres are similar solids.

(24) Triangles ABC and DEC, as seen to the right, are similar triangles. BE = 8 units, AD = 10 units, EC = 20 units. Find AC.

A) 25 units
B) 26 units
C) 32 units
D) 35 units



(25) In the sequence: –90, –83, –76, –69, . . .–20, . . ., what is the ninth term?

A) –62 B) –34 C) –27 D) –13

(26) When Liz first started exercising, she could exercise for only 8 minutes. Yesterday, she exercised for 15 minutes. Which of the following proportions could be used to determine the percent increase in Liz's exercise time?

A) $\frac{x}{100}=\frac{8}{7}$ B) $\frac{8}{x}=\frac{7}{100}$ C) $\frac{100}{x}=\frac{7}{8}$ D) $\frac{x}{100}=\frac{7}{8}$

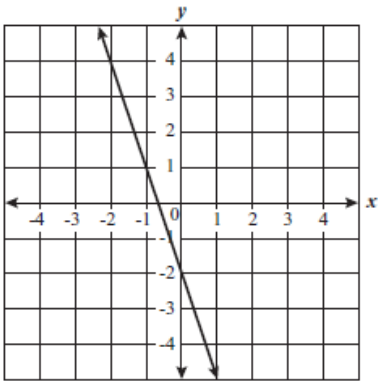
(27) Albert correctly answered 90% of the questions on a math test that contained exactly 40 questions. How many of the questions did he answer incorrectly?

A) 4 B) 10 C) 44 D) 90

(28) Which of the following is the prime factorization of 72?

A) $2^3 \times 3^2$ B) $2^4 \times 3^3$ C) 8×3^2 D) $2^3 \times 9$

(29) Which of the following equations best represents the line in the graph shown to the right?



A) $y = -2x + 3$

B) $y = -3x + 2$

C) $y = -2x - 3$

D) $y = -3x - 2$

(30) A rectangular hay field has a length of 3000 ft. and width of 1200 ft. A rectangular wheat field is twice the length and one quarter the width of the hay field. What percent of the hayfield's area is the wheat field?

A) 10% B) 25% C) 50% D) 100%

(31) A computer programmer makes $34.32 per hour for 40 hours per week, 50 weeks per year. She is offered a new job with a $72,500 annual salary. How much more would she earn per hour in the new job if she works the same number of hours per year?

A) $1.93 B) $3.63 C) $36.25 D) $38.60

(32) Maria needs to pour a concrete floor for a garage. The floor is to be 24 feet by 30 feet and 6 inches thick. If concrete costs $150 per cubic yard and can only be bought in whole cubic yards, what is the cost of the floor?

A) $2100 B) $6000 C) $24000 D) $72000

(33) Wesley is planning a basketball tournament. He needs to know how many games will be played to reserve the gym. If there are 10 teams, and each team plays all the other teams twice, how many games will there be?

A) 81 B) 90 C) 162 D) 180

(34) Which statement best describes the similarities of the graphs $2y = 5x + \frac{6}{7}$ and $2y = 3x + \frac{6}{7}$?

A) The y-intercepts are the same.
B) The slopes are the same.
C) The x-intercepts are the same.
D) The graphs are identical.

(35) The set {T, A, M, E} has how many subsets?

A) 16 B) 15 C) 8 D) 4

(36) The simple annual interest on $300 at 5% for 3 years is equal to what amount?

A) $90 B) $45 C) $15 D) $9

(37) 0.121212 . . . is equal to what common fraction?

A) $\frac{1}{12}$ B) $\frac{4}{33}$ C) $\frac{2}{15}$ D) $\frac{1}{15}$

(38) The volume of a right circular cone whose height is 12 cm and radius is 8 cm is $k\pi$ cm^3. Find k.
A) 768 B) 512 C) 256 D) 96

(39) How many positive integral divisors does 42 have?
A) 3 B) 6 C) 8 D) 42

(40) The roots $2x^2 - 5x + 2 = 0$ are P, Q. What is the product of P and Q?
A) $\frac{1}{5}$ B) $\frac{2}{5}$ C) $-\frac{2}{5}$ D) 1

(41) If a square has a diagonal measuring $\sqrt{50}$ cm, then then what is the perimeter of this square?
A) 20 cm B) 25 cm C) 100 cm D) 200 cm

(42) If $x + y = 6$ and $x - y = -8$, then what is y equal to?
A) 2 B) 7 C) –2 D) –6

(43) 16% of 21 is equal to 24% of what number?
A) 7 B) 12 C) 14 D) 31.5

(44) Evaluate: $\frac{1}{3} + \frac{1}{6} + \frac{1}{10} + \frac{1}{15} + \frac{1}{21} + \frac{1}{28}$
A) $2\frac{1}{2}$ B) $\frac{3}{5}$ C) $1\frac{1}{4}$ D) $\frac{3}{4}$

(45) If $x^5 = 243$, then what is 2^x?
A) 8 B) 6 C) 32 C) 16

(46) If $x + (x + 3) + (x + 6) + (x + 9) + (x + 12) = 85$, then what is $(x + 6)$ equal to?
A) 15 B) 17 C) 19 D) 21

(47) If $x - y = 7$ and $x + y = 11$, then $x^2 - y^2$ is equal to what value?
A) 18 B) 4 C) 77 D) –44

(48) A trapezoid with bases 12 inches and 7 inches and a height of 8 inches has what area?
A) 42 square inches B) 48 square inches C) 56 square inches D) 76 square inches

(49) Evaluate: $4\frac{7}{9} - 2\frac{2}{3}$.
A) $2\frac{1}{9}$ B) $1\frac{5}{9}$ C) $2\frac{5}{9}$ D) $1\frac{2}{3}$

(50) $366\frac{2}{3}$% of N is 66. What is N?
A) 18 B) 16 C) 24 D) 22

(51) A nickel, a dime, and a penny are tossed. What is the probability that they do not all land the same way. In other words, the coins are not all heads nor are they all tails?

A) $\frac{1}{3}$ B) $\frac{1}{5}$ C) $\frac{1}{2}$ D) $\frac{3}{4}$

(52) What number, when doubled and then increased by 13, equals 89?

A) 51 B) 43 C) 28 D) 38

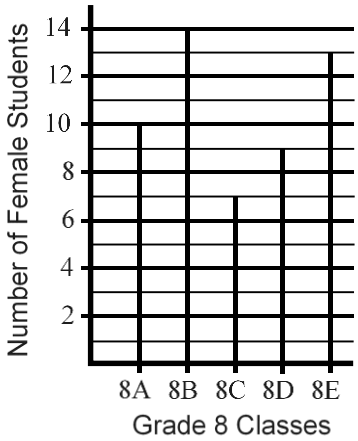
(53) The graph to the right shows the number of female students in five grade-8 classes labeled 8A through 8E. What is the average (mean) number of female students in these five classes?

A) 10.2

B) 10.3

C) 10.4

D) 10.6



(54) How many whole numbers, *n*, can be found so that $\frac{2}{7} < \frac{n}{11} < \frac{2}{3}$?

A) 3 B) 4 C) 5 D) 6

(55) Mike earned $10.00 each day for a week shoveling walks. On the eighth day he earned $1.75 more than his average earnings for all 8 days. How much did Mike make on the eighth day?

A) $11.00 B) $11.75 C) $12.00 D) $13.75

(56) A frog is climbing out of a 13 foot well. He can climb 3 feet per day, but in the night, he slides down 1 foot. How many days will it take for him to get out of the well?

A) 5 days B) 6 days C) 7 days D) 12 days

(57) In the 2-dimensional coordinate system, Kenzie is standing at (1, 2). She needs to get to the coffee stand at (3, 5). How far is she from the coffee stand?

A) 13 B) $7\frac{1}{2}$ C) 6 D) $\sqrt{13}$

(58) Two cars are 210 miles apart. If they go towards each other they'll meet in 2 hours. If they drive in the same direction with the same speed from before, the faster one will catch up in 14 hours. How fast is the faster car driving?

A) 50 mph B) 55 mph C) 60 mph D) 65 mph

(59) Sergio ate half of the jelly beans in a bag. Genny ate seven more. If 5 jelly beans remain, how many jelly beans were originally in the bag?

A) 20 B) 24 C) 28 D) 32

(60) How many prime numbers less than 30 are there?

A) 10 B) 11 C) 12 D) 15

2018 TAME Middle School Practice State Mathematics Test
Answer Key

(1)	D	(21)	C	(41)	A
(2)	D	(22)	D	(42)	B
(3)	A	(23)	C	(43)	C
(4)	A	(24)	D	(44)	D
(5)	C	(25)	B	(45)	A
(6)	D	(26)	D	(46)	B
(7)	C	(27)	A	(47)	C
(8)	B	(28)	A	(48)	D
(9)	D	(29)	D	(49)	A
(10)	C	(30)	C	(50)	A
(11)	A	(31)	A	(51)	D
(12)	C	(32)	A	(52)	D
(13)	B	(33)	B	(53)	A
(14)	B	(34)	A	(54)	B
(15)	C	(35)	A	(55)	C
(16)	B	(36)	B	(56)	B
(17)	C	(37)	B	(57)	D
(18)	B	(38)	C	(58)	C
(19)	A	(39)	C	(59)	B
(20)	B	(40)	D	(60)	A