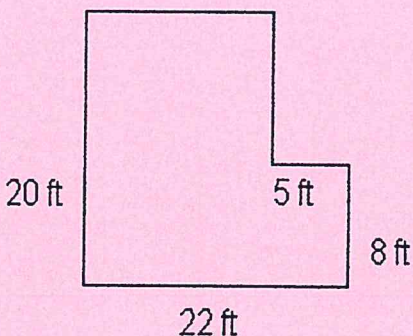


45th Annual Math Superbowl – 2018
Level 1 – 7th Grade Blitz

- Directions:
1. Select the most correct answer for each question.
 2. Use $\pi = 3.14$ if needed.
 3. NO CALCULATORS OR ELECTRONIC DEVICES MAY BE USED.
 4. Note that N.O.T. means “none of these.”

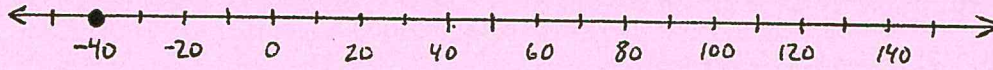
1. Which of the following numbers is 7 units away from -3 ?
(A) -7 (B) 7 (C) 4 (D) -4 (E) N.O.T.
2. Angles F and G are complementary angles. Angles G and H are supplementary angles. The degree measure of each angle is a whole number. What is the smallest possible measure of angle H?
(A) 1° (B) 89° (C) 91° (D) 179° (E) N.O.T.
3. Find the area of a room with the following dimensions:



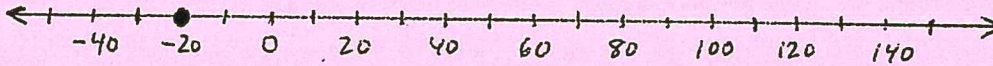
- (A) 440 sq. ft. (B) 84 sq. ft. (C) 380 sq. ft. (D) 400 sq. ft. (E) N.O.T.
4. Evaluate the formula $A = P \left(1 + \frac{rt}{4} \right)$ for $r = 2$, $t = 6$, and $P = 200$.
(A) 200 (B) 204 (C) 600 (D) 800 (E) N.O.T.
 5. Jeffrey typed 110 words in $2\frac{3}{4}$ minutes. At this rate, how many words can he type in $4\frac{1}{4}$ minutes?
(A) 71 (B) 165 (C) 180 (D) 255 (E) N.O.T.
 6. Which of the following cannot represent a probability?
(A) $\frac{3}{4}$ (B) 1.0 (C) 21.75% (D) 1.25 (E) N.O.T.

7. In a game, Janeesa started with 0 points. She then earned 50 points, lost 80 points, and earned 10 points. Which number line shows Janeesa's ending score in the game?

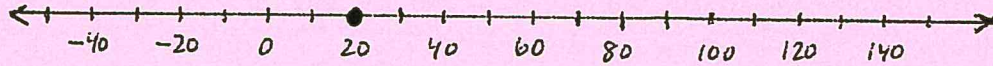
(A)



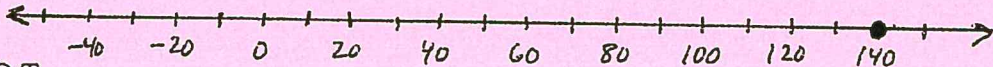
(B)



(C)



(D)



(E) N.O.T.

8. Nadia will survey 50 students in her town to find out what is their favorite summertime activity. Which group would likely give the best representation for her survey?

- (A) Fifty students at a library.
 (B) Fifty students in her school.
 (C) Fifty students at a shopping mall.
 (D) Fifty students taking swimming lessons.
 (E) N.O.T.

9. A roll of 40 quarters weighs 8 ounces. Which proportion can be used to find the weight w (in ounces) of 200 quarters?

- (A) $\frac{40}{8} = \frac{200}{w}$ (B) $\frac{40}{w} = \frac{8}{200}$ (C) $\frac{40}{200} = \frac{w}{8}$ (D) $\frac{40}{8+w} = \frac{w}{200}$ (E) N.O.T.

10. Last year, Horatio had 25 model airplanes in his collection. This year, he has 32% more model airplanes. Horatio then gave his sister six model airplanes to start a collection. After giving his sister these planes, how many model airplanes does Horatio have?

- (A) 8 (B) 27 (C) 33 (D) 51 (E) N.O.T.

11. In Ms. Morales' class, the ratio of boys to girls is 3:7. The class sizes at Ms. Morales' school range from 22 to 34 students per class. What is the total number of students in Ms. Morales' class?

- (A) 21 (B) 24 (C) 28 (D) 30 (E) N.O.T.

12. What is the circumference of a circle whose area is 49π square units?

- (A) 14π units (B) 28π units (C) 98π units (D) 7π units (E) N.O.T.

13. Brianna biked 2.82 miles on Monday, 3.75 miles on Wednesday, and 2.13 miles on Friday. Brianna estimated the total distance she biked. Which of the following statements correctly compares and estimate of the total distance with the exact value that Brianna biked?
- (A) The estimate $2 + 3 + 2$ is smaller than the exact answer but is within 1 mile.
 - (B) The estimate $2 + 4 + 2$ is greater than the exact answer but is within 1 mile.
 - (C) The estimate $3 + 4 + 2$ is smaller than the exact answer but is within 1 mile.
 - (D) The estimate $3 + 4 + 2$ is greater than the exact answer but is within 1 mile.
 - (E) N.O.T.

14. If p represents the price of an item before a sales tax, which of the following represents the total cost after adding a 9% sales tax?
- (A) $0.09p$ (B) $0.9p$ (C) $1.9p$ (D) $9p$ (E) N.O.T.

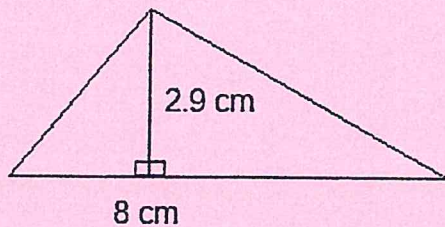
15. Mr. Flores has a box containing bags of different types of chips. The number of bags and types of chips are shown in the following table.

Type of Chips	Number of Bags
Plain	3
Corn	8
Nacho	5
Cheddar	4

Mr. Flores will randomly give one bag of chips to each of his twenty students. Nelson is one of the students in Mr. Flores' class. Which statement about the likelihood of Nelson receiving different types of chips is true?

- (A) Nelson is less likely to receive either plain or nacho chips than cheddar chips.
 - (B) Nelson is twice as likely to receive cheddar chips as he is to receive corn chips.
 - (C) Nelson is equally as likely to receive corn chips as he is to receive either plain or nacho chips.
 - (D) Nelson is more likely to receive nacho chips than plain chips, and he is less likely to receive nacho chips than cheddar chips.
 - (E) N.O.T.
16. Which of the following is a prime number?
- (A) 21 (B) 51 (C) 91 (D) 101 (E) N.O.T.
17. Compute the following and simplify as far as possible: $6\frac{1}{8} - 3\frac{5}{12}$.
- (A) $3\frac{7}{24}$ (B) $2\frac{17}{24}$ (C) $3\frac{1}{2}$ (D) $2\frac{5}{24}$ (E) N.O.T.

27. Find the area of the triangle shown below.



- (A) 23.2 cm (B) 23.2 sq. cm (C) 10.9 cm (D) 10.9 cubic cm (E) N.O.T.

28. Mei's average grade on 5 math tests was 88. If her lowest grade was dropped, her average on the other tests would be 90. What was Mary's lowest grade in the original set of 5 grades?

- (A) 80 (B) 84 (C) 88 (D) 90 (E) N.O.T.

29. Find the next number in the sequence: 1, 3, 6, 10, 15...

- (A) 18 (B) 19 (C) 20 (D) 21 (E) N.O.T.

30. Find the sum of the first 100 positive integers.

- (A) 200 (B) 500 (C) 1000 (D) 1010 (E) N.O.T.

31. A natural number is a multiple of 13 and is also divisible by 4 and 6. What is the smallest number that satisfies these conditions?

- (A) 13 (B) 24 (C) 156 (D) 312 (E) N.O.T.

32. Suppose today is Tuesday. What day of the week will it be 100 days from now?

- (A) Thursday (B) Friday (C) Saturday (D) Sunday (E) N.O.T.

33. What number, multiplied by itself is equal to the product of 32 and 162?

- (A) 52 (B) 72 (C) 92 (D) 102 (E) N.O.T.

34. A car travels 1 mile in 1 minute and 12 seconds. How many miles will it travel in 1 hour at the given rate?

- (A) 38 (B) 50 (C) 72 (D) 112 (E) N.O.T.

35. Eight people want to play a 48 minute game as a team, but only a team of exactly 5 players is allowed to play. However, during the game, a player may be replaced by someone else. Suppose each of the 8 people plays in the game for the same amount of time. How many minutes will each of the 8 people play?

- (A) 5 (B) 30 (C) 48 (D) 240 (E) N.O.T.

36. There are 400 students at Craycray School, where the only languages taught are French and Spanish. Of these, 150 take French and 85 take Spanish. If 35 students take both languages, how many students don't take a language class?

- (A) 0 (B) 105 (C) 200 (D) 280 (E) N.O.T.

37. A bag contains 500 beads, each of the same size, but in 5 different colors. If there are 100 beads of each color, and I am blindfolded, what is the smallest number of beads I must pick to be absolutely sure I have picked 5 beads of the same color?

- (A) 5 (B) 21 (C) 51 (D) 404 (E) N.O.T.

38. How many different 3-digit numbers can be made using the digits 2, 4, 5, and 7 if each of these digits can only be used once?

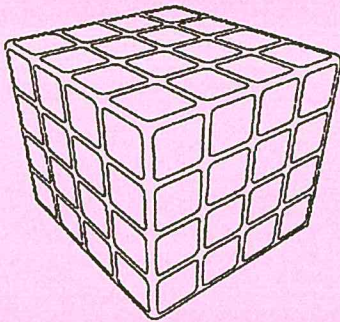
- (A) 24 (B) 64 (C) 81 (D) 560 (E) N.O.T.

39. Find the 4-digit number ABCD if:

$$\begin{array}{r} ABCD \\ \times \quad 9 \\ \hline DCBA \end{array}$$

- (A) 9801 (B) 7835 (C) 3587 (D) 1089 (E) N.O.T.

40. Cube-shaped blocks are stacked together to form a 4 X 4 X 4 cube as shown. If the entire outside of the cube is painted red, how many of the small cubes have exactly 2 faces painted red?



- (A) 8 (B) 12 (C) 16 (D) 24 (E) N.O.T.

41. Half of 2^{16} is:

- (A) 1^{16} (B) 2^8 (C) 2^{15} (D) 1024 (E) N.O.T.

42. When is x greater than $-x$?

- (A) When x is positive (B) When x is negative
(C) Always (D) Never (E) N.O.T.

43. Solve for x : $|x + 1| = -2$.
(A) -3 (B) 1 (C) -1 (D) Both A and B (E) N.O.T.
44. It takes Sal 8 hours to paint a house, and Juan 12 hours to paint the same house. Let x = the number of hours it takes for them to paint the house together. Which range is true of x ?
(A) $0 < x < 4$ (B) $4 < x < 8$ (C) $8 < x < 12$ (D) $x > 12$ (E) N.O.T.
45. The repeating decimal $0.129129\dots$ is converted to a fraction in lowest terms. What is the denominator?
(A) 10 (B) 100 (C) 1000 (D) 99 (E) N.O.T.
46. Josie bought a 25-pound bag of rice. She cooked 6.25 pounds of the rice. She stored the rest of the rice in $3\frac{3}{4}$ -pound portions. Any leftover rice is given to a friend. What is the maximum number of $3\frac{3}{4}$ -pound portions that Josie could store?
(A) 4 (B) 5 (C) 6 (D) 7 (E) N.O.T.
47. Compute the following: $-1\frac{1}{5} \div \left(-1\frac{5}{6}\right)$.
(A) $-\frac{36}{55}$ (B) $-\frac{11}{5}$ (C) $\frac{6}{25}$ (D) $\frac{1}{6}$ (E) N.O.T.
48. How many different ways can Al, Bea, Cy, Dee, and Ed be arranged in a line?
(A) 5 (B) 25 (C) 120 (D) 125 (E) N.O.T.
49. Four coins are randomly dropped on a table. Each coin has 2 sides (head and tail). What is the probability that at least 3 coins will have a head facing up?
(A) $\frac{1}{16}$ (B) $\frac{1}{4}$ (C) $\frac{3}{16}$ (D) $\frac{5}{16}$ (E) N.O.T.
50. Four coins are randomly dropped on a table. Each coin has 2 sides (head and tail). What is the probability that exactly 3 coins will have a head facing up?
(A) $\frac{1}{16}$ (B) $\frac{1}{4}$ (C) $\frac{3}{16}$ (D) $\frac{5}{16}$ (E) N.O.T.

