

Dick Schaff Math Superbowl XLII
Level 1: 7th Grade Huddle – 2015

- Directions:** (1) Select the most correct answer for each question and mark it on your answer form.
(2) No calculators of any sort are allowed.
(3) Note that N.O.T. means “None of these.”

1. Compute $(-4\frac{2}{5}) \div (1\frac{1}{10})$.
a) -4 b) $-\frac{121}{25}$ c) $-\frac{25}{121}$ d) $-\frac{1}{4}$ e) N.O.T.

2. Which of the following cannot be used to construct a triangle?
a) Three acute angles.
b) Two acute angles and one right angle.
c) Two acute angles and one obtuse angle.
d) Two right angles and one acute angle.
e) N.O.T.

3. The total height h of a stack of bricks is proportional to the number n of bricks with a constant height x . Which is the correct equation to represent the situation?
a) $h = xn$ b) $x = hn$ c) $h = \frac{x}{n}$ d) $x = \frac{n}{h}$ e) N.O.T.

4. A twelve-inch ruler is divided into 48 equal pieces. What is the length of each piece?
a) 4 inches b) 1 inch c) $\frac{1}{2}$ inch d) $\frac{1}{48}$ inch e) N.O.T.

5. If Sophie rolls a standard six-sided die 300 times, how many times can she expect the number 4 to come up in these rolls?
a) 4 times b) 30 times c) 60 times d) 75 times e) N.O.T.

6. An 8-pound bag of cereal cost \$42. If the unit cost of the cereal stays the same, how much would a 10-pound bag of the same cereal cost?
a) \$52.50 b) \$45.00 c) \$60.00 d) \$ 67.50 e) N.O.T.

7. Compute the value of $\frac{17}{40} - 3.14 + 2$ as a fraction.
a) $-\frac{97}{100}$ b) $-\frac{143}{200}$ c) $-\frac{59}{8}$ d) $-\frac{29}{200}$ e) N.O.T.

8. Suppose angles A and B are supplementary, angle A has degree measure 35° , and angle B had degree measure $(10x - 5)^\circ$. What is the value of x ?
- a) 90 b) 6 c) 15 d) 180 e) N.O.T.
9. Divide 5250 by 35.
- a) $\frac{1}{160}$ b) 150 c) 160 d) $\frac{1}{150}$ e) N.O.T.
10. Steve drove for five hours at an average speed of 65 miles per hour, took a one hour break for dinner, and then drove for two more hours at an average speed of 55 miles per hour. How far did Steve drive?
- a) 350 miles b) 385 miles c) 405 miles d) 435 miles e) N.O.T.
11. Emily bought a jewelry box at a garage sale, and she plans to re-cover it with new fabric. If the jewelry box is a cube whose sides are 8 cm long, how much fabric will she need to cover all sides of the box?
- a) 64 cm^2 b) 192 cm^2 c) 384 cm^2 d) 512 cm^2 e) N.O.T.
12. Simplify $\frac{\frac{9}{8} \times \frac{4}{3}}{\frac{1}{2} \div \frac{3}{4}}$ as much as possible.
- a) 1 b) $\frac{13}{9}$ c) 4 d) $\frac{9}{4}$ e) N.O.T.
13. Which fraction represents $0.\overline{48}$?
- a) $\frac{48}{1000}$ b) $\frac{47}{99}$ c) $\frac{48}{100}$ d) $\frac{16}{33}$ e) N.O.T.
14. Naomi randomly guesses the answers to a True/False question followed by a multiple-choice question containing one correct answer and three incorrect answers. What is the probability that Naomi answers both questions correctly?
- a) $\frac{3}{4}$ b) $\frac{1}{4}$ c) $\frac{1}{8}$ d) $\frac{1}{2}$ e) N.O.T.
15. A computer regularly priced at \$840 is marked down 40%. What is the sale price of the computer?
- a) \$800 b) \$40 c) \$336 d) \$210 e) N.O.T.
16. Subtract 45.6287 from 91.4:
- a) -45.2287 b) 45.2287 c) -45.7713 d) 45.7713 e) N.O.T.

17. Let n represent the original number of students competing in a spelling bee. After the first round of competition, the number of students is $0.9n$. Choose the best description of what happened during the first round of competition from the choices below.
- a) Ninety percent more students joined the competition.
 - b) Ten percent of the original competitors were eliminated.
 - c) Nine-tenths of the original competitors were eliminated.
 - d) Nine percent of the original competitors remained in the competition.
 - e) N.O.T.
18. Sarah bakes cherry pies to sell at the bake sale at her school. Each pie requires $\frac{2}{3}$ cup of brown sugar. What is the maximum number of pies that can she bake if she has $4\frac{1}{2}$ cups of brown sugar?
- a) 3
 - b) 5
 - c) 7
 - d) 9
 - e) N.O.T.
19. A whole number between 11 and 19, inclusive, is chosen at random. What is the probability that the number is prime or a multiple of three?
- a) $\frac{2}{9}$
 - b) $\frac{7}{9}$
 - c) 1
 - d) $\frac{4}{9}$
 - e) N.O.T.
20. A feeding trough is in the shape of a right triangular prism. The triangular end of the trough measures 3 feet across and $1\frac{1}{4}$ feet deep. The feeding trough is 80 feet long. How much food can the trough hold?
- a) 150 ft^3
 - b) 300 ft^3
 - c) 75 ft^3
 - d) 450 ft^3
 - e) N.O.T.
21. Honey is produced proportionally to the number of bees in a colony. A large colony of 96,000 honeybees produces 2,000 cups of honey. How many cups of honey per honeybee are produced?
- a) $\frac{5}{24}$ cup per honeybee
 - b) $\frac{1}{48}$ cup per honeybee.
 - c) 192,000,000 cups per honeybee.
 - d) 48 cups per honeybee
 - e) N.O.T.
22. A cell phone that normally costs \$270 is on sale for one-third off the original price. Sales tax on the purchase price is 5%. What is the final amount paid at checkout?
- a) \$185.00
 - b) \$189.00
 - c) \$94.50
 - d) \$95.00
 - e) N.O.T.
23. The area of a circle is 25π square inches. What is the perimeter of the circle?
- a) 5π inches
 - b) 1250π inches
 - c) $\frac{5}{2}$ inches
 - d) 10π inches
 - e) N.O.T.

24. Simplify $\frac{1}{2}(5x - 6) + \frac{1}{3}$ as far as possible.

- a) $\frac{5}{2}x - \frac{10}{3}$ b) $\frac{5}{2}x - \frac{17}{3}$ c) $\frac{5}{2}x + \frac{17}{6}$ d) $\frac{5}{2}x + \frac{8}{3}$ e) N.O.T.

25. Kristina checked a book out of the local library two days ago, and she read half the book that night. Yesterday, she read 40% of the book. What fraction of the book does Kristina have left to read?

- a) $\frac{1}{4}$ b) $\frac{3}{10}$ c) $\frac{1}{10}$ d) $\frac{9}{10}$ e) N.O.T.

26. A small airport expands the dimensions of its rectangular runway by a scale factor of $\frac{3}{2}$. The new runway is $\frac{3}{4}$ miles long and covers $\frac{1}{24}$ miles². What is the width of the original runway?

- a) $\frac{1}{27}$ miles b) $\frac{1}{12}$ miles c) $\frac{1}{48}$ miles d) $\frac{3}{64}$ miles e) N.O.T.

27. What is the units digit in 3^{2015} ?

- a) 1 b) 3 c) 5 d) 7 e) N.O.T.

28. Which of the following equations correctly represents the following situation:

“Nine less than three times the sum of x and eight is twenty-seven.”

- a) $3(x + 8) - 9 = 27$ b) $3x + 8 - 9 = 27$
c) 4 d) $8 - 3(x + 7) = 27$
e) N.O.T.

29. Tanya works a part-time job while taking evening classes at her local community college. She sets up a payment plan so that she pays \$320.50 per month to attend school. If Tanya earns \$292.25 per month from her job, which value best represents her financial status after one year?

- a) \$339.00 b) \$3,507.00 c) -\$339.00 d) -\$3,846.00 e) N.O.T.

30. Calculate $8\frac{7}{12} - 4\frac{3}{4}$.

- a) $4\frac{1}{2}$ b) $3\frac{1}{6}$ c) $4\frac{1}{6}$ d) $3\frac{5}{6}$ e) N.O.T.