

Dick Schaff Math Superbowl XLIII
Level 1: 7th Grade Huddle – 2016

- 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. A circle has a diameter of 6 inches. What will the area be if the diameter is doubled?
a) 12π square inches b) 18π square inches c) 36π square inches d) 144π square inches e) N.O.T.

2. What is the surface area of a right circular cylinder with a diameter of 2 inches and a height of 5 inches?
a) 11π sq. inches b) 12π sq. inches c) 7π sq. inches d) $(10 + 2\pi)$ sq. inches e) N.O.T.

3. How many different triangles can be drawn that contain both a 65 degree angle and a 37 degree angle?
a) 0 b) 1 c) 2 d) 3 e) N.O.T.

4. Let p be the price of an item. When it is on sale, the cost of the item is $0.87p$. How much is the markdown?
a) 1.3% b) 8.7% c) 13% d) 87% e) N.O.T.

5. If a right circular cylinder standing on its end is sliced in half at an angle, what shape will the cross-section be?
a) rectangle b) circle c) oval d) triangle e) N.O.T.

6. Translate the following sentence into symbols: “Five is six less than the sum of one-half x and 2.”
a) $\frac{1}{2}(x + 2) - 6 = 5$ b) $(\frac{1}{2}x + 2) - 6 = 5$ c) $6 - (\frac{1}{2}x + 2) = 5$ d) $6 - \frac{1}{2}(x + 2) = 5$ e) N.O.T.

7. Which of the following has the smallest probability?
A) Rolling a 6 on a die twice in a row
B) Rolling two 6’s on a pair of dice
C) Rolling a sum of 12 on a pair of dice
D) All three have the same probability
a) A b) B c) C d) D e) N.O.T.

8. If y is proportional to x and the graph of y versus x goes through the point (6, 10), which other point does the graph go through?
a) (0, 0) b) (2, 6) c) (1, 1) d) (10, 14) e) N.O.T.

9. If Fergus P. Tivington eats two-thirds of a pie and later eats half of the remaining pie, what fraction of a pie will he have left?
a) $1/6$ b) $1/3$ c) $2/3$ d) $5/6$ e) N.O.T.
10. Walter is a salesman who gets paid \$75 per day plus \$0.60 for each item he sells. How many items does he need to sell in order to make at least \$100 in a day?
a) 1 b) 5 c) 41 d) 42 e) N.O.T.
11. What is the circumference of a circle with an area of 36π square units?
a) 3π b) 6π c) 12π d) 24π e) N.O.T.
12. What is the value of $\frac{5}{8} - (-\frac{2}{25})$?
a) $7/33$ b) $2/9$ c) $9/20$ d) $141/200$ e) N.O.T.
13. How many units apart are $7/6$ and $-2/3$ on a number line?
a) $\frac{1}{2}$ b) $1\frac{5}{6}$ c) $\frac{5}{9}$ d) $2\frac{2}{3}$ e) N.O.T.
14. What is the mean of the following list of numbers: 1, 5, 2, 3, 2, 5, 4, 5, 9
a) $24/9$ b) 4 c) 9 d) 24 e) N.O.T.
15. A man currently makes \$15 an hour and pays no tax on his earnings. How much will he make per hour if he gets a 5% raise but also has to start paying 4% income tax?
a) \$15.12 b) \$15.15 c) \$15.50 d) \$16.38 e) N.O.T.
16. What is the area of a circle with a diameter of 10 units?
a) 5π b) 10π c) 25π d) 100π e) N.O.T.
17. What is the relationship between vertical angles?
a) congruent b) complementary c) supplementary d) sum to 180° e) N.O.T.
18. When rolling two dice, which sum below has a greater probability?
a) 9 b) 10 c) 11 d) 12 e) N.O.T.
19. The purpose of a statistical study is to help you make estimates about what group?
a) volunteers b) subjects c) sample d) population e) N.O.T.

29. Which would be expected to have a greater variation in a sample of 100 randomly selected adults in the U.S.?

- A) The ages of those selected
- B) The heights in inches of those selected
- C) The heights in feet of those selected
- D) The shoes sizes of those selected

a) A b) B c) C d) D e) N.O.T.

30. If you divide a yard stick into 100 pieces of equal length, how long will each piece be?

a) $\frac{1}{100}$ inches b) $\frac{3}{100}$ inches c) $\frac{3}{25}$ inches d) $\frac{9}{25}$ inches e) N.O.T.