

2017 Metrobank-MTAP-DepEd Math Challenge
Division Finals – Team Oral Competition
Grade 6

15-second questions

Note: If pi is necessary in the solution, DO NOT use any value. Simply express your answer in terms of pi.

1. If the difference between the radii of two circles is 10 cm, what is the difference between their circumferences? [20 π]
2. What is the least number of consecutive positive integers, that add up to 1 000? [5]
3. What is the seventh number in the sequence 1, 2, 5, 10, 17, ...? [37]
4. For three successive years, the cost of living increases by 10% compared to that of the previous year. What is the percentage increase over the three years? [33.21%]
5. Vince is twice his sister's age who is 8 years old. Their mother's age is twice the sum of their ages. How old is their mother? [48 years old]
6. The digits of the number 4765 can be rearranged to form different numbers. What is the sum of the largest and smallest of these numbers? [12 221]
7. The sides of a cube are doubled in length. What is the percentage increase in the volume of the new cube from the original cube? [700%]
8. A triangle has sides of length 6 cm, 10 cm, and 11 cm. An equilateral triangle has the same perimeter. What is the length of each side of the equilateral triangle? [9 cm]
9. A man has a rectangular patio in his garden. He decides to enlarge it by increasing both length and width by 10%. What is the percentage increase in area? [21%]
10. On a test consisting of 30 questions, Sue had 50% more right answers than she had wrong answers. Each answer was either right or wrong. How many questions did she answer correctly? [18]
11. How many edges are there on a triangular-based prism? [9]

30-second questions

Note: If pi is necessary in the solution, DO NOT use any value. Simply express your answer in terms of pi.

1. A window consists of a rectangle surmounted by a semicircle on its width. The rectangular portion has a width of 2m and a height of 3m. What is the perimeter of the window? [8 + π] meters
2. A rope of length 64 meters is cut into three pieces. The second piece is three times as long as the first, and the third is four times as long as the second. How long is the shortest piece? [4 m]
3. A rectangular box has dimensions 9 cm by 6 cm by 24 cm. A second rectangular box has volume one half of the first and has a base 6 cm by 4 cm. What is the height of the second box? [27 cm]
4. Points A, B and C lie on a straight line. A is not between B and C. The distance between A to B is 15 cm. The distance from C to A is 8 cm. What is the distance from B to C? [7 cm]
5. If -2 is substituted for x in the expression $x^3 - 4x^2 - kx - 20$, the result is 0. What is the value of k? [22]
6. If a 3 meter-post casts a shadow 7 decimeters long, what is the height of a tree, in meters, that casts a shadow 63 decimeters long? [27]

1-minute questions

1. The grand prizewinner of a lottery won $\frac{7}{10}$ of the total prize money available. Shortly thereafter, she spent $\frac{3}{4}$ of her winnings, and still had P210000 left. How much is the total amount of prize money available in the lottery? [P1 200 000]
2. A baseball team won 50 out of the 75 games that they have played and still has 45 games to play this season. How many of the remaining games must it win in order that its percentage of games won for the entire season will be 60%? [22]
3. Ana, Beth, and Cora run at constant rates. In a race of 1 000meters, Ana finished 200 meters ahead of Beth and 400 meters ahead of Cora. When Beth finished, how many meters was she ahead of Cora? [250 m]
4. A square piece of paper is folded in half to form a rectangle. This rectangle has a perimeter of 18 cm. What is the area of the original square? [36 sq cm]
5. A drain can empty a full bathtub in 15 minutes. If the drain is completely sealed, a faucet can fill an empty tub in 12 minutes. How long will it take for the faucet to fill the bathtub if the drain is open? [60 minutes]
6. Dan has P 1 000. He bought a poloshirt for P 395. He also bought an undershirt. Then, he had P375.50 left. How much did he pay for the pants? [P229.50]

Clincher

1. How many prime numbers are there from 50 to 100? [10]
2. What is the sum of the reciprocals of $\frac{3}{15}$ and $\frac{5}{25}$? [10]
3. What number am I? I am a three-digit number. My tens digit is less than 1. I am divisible by 5. My units digit is less than the hundreds digit. The number is divisible by 3. [705]

Do or Die: Find the perimeter of the figure shown, given that its area is 108sq cm.
 (The dimensions in the figure are in cm.) [58 cm]

