

Metrobank-MTAP-DepEd Math Challenge 2017
Division Orals • Grade 8

15-Second Questions [2 points each]

1. If $f(x) = 2x^2 - 5x$, compute $f(-2)$? [18]
2. If the perimeter of a square is $12x - 8$, give its area in expanded form. [$9x^2 - 12x + 4$]
3. The midpoint of $(5, 0)$ and point B is $(-2, 6)$. What are the coordinates of B ? [$(-9, 12)$]
4. What is the y -intercept of the line passing through $(3, -2)$ and with slope 4? [-14]
5. Write in scientific notation the quotient of 9×10^{-3} divided by 12×10^{-4} . [7.5×10^{-8}]
6. A die is rolled. Find the probability that the number that comes up is not a multiple of 3. [$2/3$]
7. If the mean of three numbers is 20 and the mean of five numbers is 12, what is the mean of the eight numbers combined? [15]
8. What is $39999 \div 199$? [201]
9. If the difference between the square of a positive integer and the integer before it is 33, what is the integer? [17]
10. If $4^{x+2} = \frac{1}{8}$, what is x ? [$-7/2$]
11. Write the sum of $\frac{2}{x+1}$ and $x - 1$ as a fraction in lowest terms. [$\frac{x^2 + 1}{x + 1}$]

30-Second Questions [3 points each]

1. If the sum of the squares of two positive integers is 32 and their product is 9, what is the sum of the two integers? [$5\sqrt{2}$]
2. Two years ago, Paolo was three times as old as Ron. Ten years from now, Paolo will be twice as old as Ron. How much older is Paolo than Ron? [24 yrs]
3. If $f(x)$ is a linear function such that $f(-4) = 1$ and $f(5) = 7$, what is the value of $f(1250)$? [837]
4. The sum of two numbers is 25 and their difference is 19. What is their product? [66]
5. If the largest number, 50, is removed from a set of 10 numbers, the mean is reduced by 4. What is the mean of the original set of 10 numbers? [14]
6. The officers of a math club will pay equal contributions to buy a cake worth PhP480 for their moderator. If there were two more officers, their contribution will be reduced by PhP12 each. How many officers are there? [8]

1-Minute Questions [5 points each]

1. Simplify: $\frac{24\sqrt{3} + 27}{2\sqrt{3} + 3}$ [$21 - 6\sqrt{3}$]
2. Solve for x : $6^{3x-4}2^{2x+3} = 648(48)^x$ [4]
3. If $A(-2, -1)$ and $B(4, 3)$ are the endpoints of the base of an isosceles triangle, give the equation, in slope-intercept form, of the line containing the third vertex of the triangle. [$y = -\frac{3}{2}x + \frac{5}{2}$]
4. What is the value of x , if the numbers $x, 2x, 3, 6, 4, 3, 2, 9$ have a mean of 7 and median 5? [9]
5. Find the sum $\frac{1}{2 \cdot 4} + \frac{1}{3 \cdot 5} + \frac{1}{4 \cdot 6} + \dots + \frac{1}{13 \cdot 15}$. [$73/210$]
6. If $4^x + 2(2^x) = 80$, what is the value of x ? [3]

Clincher Questions

- C.1. If $(-1)^n = -1$, what is the greatest common factor of n and 4? [1]
- C.2. a cube has side length $(2\sqrt{5} - 3)$ cm. what is its volume? [$(58\sqrt{5} - 87)$ cm³]
- C.3. It takes Tom twice as long as Sam to drive from A to B . Sam is at A and Tom is at B . If they start driving towards each other at the same time, they will meet one hour later. If instead they started driving in the same direction (with Sam driving towards B), how long before they meet? [3 hrs]

Do-or-Die Question

- DoD. If a three-digit number is randomly selected, what is the probability that it is neither a multiple of 3 nor of 5? [$193/333$]