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THETA CIPHERING
PRACTICE QUESTION

If y varies jointly as x and z and inversely as $\sqrt{w}$, and y = 12 when x = 2, z = 6, and w = 9, find y when x = 5, z = 7, and w = 25.

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QUESTION # 2

When the Tennessee Chapter of the Grizzly fan club quit accepting new members, it boasted a total of 500 members, 99% of which were male. One year later, no members had joined the club. However, some males, but no females, had withdrawn from the club and the club was then only 96% male. How many members were then in the club?

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QUESTION #1

Find the diameter of a sphere that has a volume numerically equal to its surface area.

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QUESTION # 3

Find the exact perimeter of Triangle ABC in terms of 'a' if A(- a, 0), B(a, 0) and C($0, a\sqrt{3}$).

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QUESTION #4

Given $\frac{a}{b} = 3$, $\frac{a}{c} = 12$, and $\frac{a}{d} = 2$. Find the value of $\frac{ab}{cd}$

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QUESTION # 6

Solve for x if $|2 - |2 - |2 - |2 - x||| = 0$

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QUESTION #5

Given $7^3 \cdot 6^3 \cdot 15^2 = 21^x \cdot 14^y \cdot 10^z \cdot 3^w$, where x, y, z, and $w \neq 0$. Find $x + y + z + w$.

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QUESTION # 7

Solve the following equation for x: $X^2 + 2AX - 3XY - 6AY = 0$

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QUESTION # 8

Find $f(664)$ if $f(x)$ is a linear function such that $f(-2) = -1$ and $f(-1) = -4$.

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QUESTION # 10

Seventeen people enter a cribbage tournament. Each entry is to play the other entries exactly once. How many games will be played in ALL? (Cribbage is a traditional card game played by two people where the score is kept by moving pegs in holes on a board.)

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QUESTION # 9

The point P (t, 4) lies on the line m, $3x - ty = 10$. Find the equation of the line n, in $Ax + By = C$ form where $A > 0$, and A, B, and C are integers, which is perpendicular to the line m and passes through the point $Q(-t, t)$.

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QUESTION # 11

Find the distance between the center of $X^2 + 4Y^2 + 6X - 8Y + 9 = 0$ and the center of $Y^2 - 4X^2 + 4Y + 24X - 41 = 0$ in simplest radical form.

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