Question 1. What is the sum of all prime numbers less than 30?
Answer: 129

Question 2. What is the length of the edge of a cube having the same numerical value for its volume as that of its surface area?
Answer: 6

Question 3. How many integers x, $1 \leq x \leq 99$ are divisible by 3 but not by 21 ?
Answer: 29

Question 4. What is the value of $x + y$, where x and y are the smallest possible natural numbers such that $360x$ is a square number and $36y$ is a cubic number ?
Answer: 16

Question 5. What is the area of a regular hexagon with side length 1?
Answer: $3\frac{\sqrt{3}}{2}$

Question 6. What is the algebraic sum of the solutions to the equation: $(2x-1)(4x+3)(x+1)(x^2-4x+1) = 0$?
Answer: $\frac{11}{4}$

Question 7. Suppose that $\sin(2\alpha) = -\frac{3}{5}$, and $\cos(2\alpha) = \frac{4}{5}$. Find the value of $\cot(\alpha)$.
Answer: -3

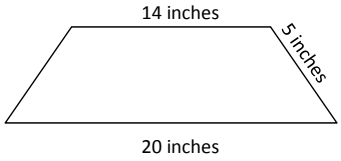
Question 8. What is the number of digits in $4^{29}5^{51}$ (when written in the usual base 10 form)?
Answer: 54

Question 9. What is the expected score for a basketball team that normally hits 30% of their 3-point attempts, 50% of their 2-point attempts, and 75% of their free throws, if they attempt 20, 60, and 16 such shots respectively?
Answer: 90

Question 10. $\dfrac{1}{365}\displaystyle\sum_{k=10}^{14} k^2 = ?$

Answer: 2

Question 11. Find the area of the isosceles trapezoid shown.
Answer: 68 Square Inches

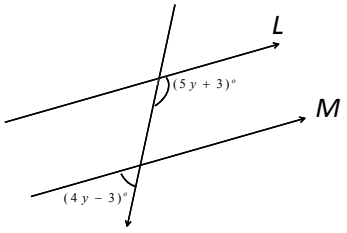


Question 12. Determine all values of x that satisfy the equation:
$x^2 27^{x/3} - x(3)^{x+2} - 108(3)^{x-1} = 0$
Answer: 12 and -3

Question 13. What is $\arccos\left(\cos\left(-\frac{3\pi}{4}\right)\right) + \arcsin\left(\sin\left(\frac{7\pi}{12}\right)\right)$?
Answer: $\frac{7\pi}{6}$

Question 14. What is the radius of the circle $x^2 + y^2 - 6x - 4y + 12 = 0$?
Answer: 1

Question 15. In the figure below, lines L and M are parallel. What is the value of $20y$?
Answer: 400



Question 16. Suppose that 10! is written as $2^g \cdot 3^s \cdot 5^w \cdot 7^u$. Find $g+s+w+u$.
Answer: 15