Name: _____

School: _____

1. _____ Find $\dfrac{11}{7} - \dfrac{4}{3}$.

2. _____ $547 + 769 + 456 =$

3. _____ What is the least common multiple of 27 and 28?

4. _____ How many prime factors does 2014 have?

5. _____ Find the mode: 8, 9, 9, 8, 9, 8, 8, 9, 9, 8, 10, 10, 10, 10, 10, 10, 9, 8, 9.

6. _____ $16 \times 89 =$

7. _____ Find the units digit of 80243^{4568}.

8. _____ The function $y = 2x^2 + kx + 9$ has roots $-\dfrac{3}{2}$ and -3. Find k.

9. _____ What is the next term in the series? 3, 4, 8, 17, 33, 58, . . .

10. _____ Four years ago, Peter was three times as old as Heather. If the sum of their current ages is 48, how old is Heather now?

11. _____ $\dfrac{7}{13} \times \dfrac{5}{3} \times \dfrac{9}{49} =$

12. _____ $4\sin\left(\dfrac{\pi}{3}\right) =$

13. _____ How many distinct arrangements of $THAKKAR$ are there?

14. _____ Jenny's average score on her past four tests is 90. However, she screwed up terribly on her fifth test, so her average score dropped to a 80. What was her score on the fifth test?

15. _____ What is the remainder when 6969 is divided by 9?

16. _____ Express $\dfrac{12 \times 5^{-5} \times 10^{36}}{2^5 \times 10^6}$ in scientific notation.

17. _____ $|15 + 20i| =$

18. _____ Find the sum of the exterior angles of a regular heptagon.

19. _____ Find the center of $6x^2 + 48x + 32y^2 - 64y + 45 = 0$.

20. _____ Roi and Sarah are located at point $(14, 35)$. If a shelter is located at point $(24, 50)$, what is the shortest distance the two have to travel to get there? Answer in simplified terms.

21. _____ Find the area of a hexagon with side length $4\sqrt{3}$.

22. _____ $103 \times 11^2 =$

23. _____ Which value is greater, $\sqrt[3]{511}$ or 2^3?

24. _____ If $k + t = 5$ and $k^2 + t^2 = 11$, find the product kt.

25. _____ Radeka's left robotic eye is a perfect sphere with a diameter of 6.0 cm. Find the surface area of the eye.

26. _____ Solve for x: $1000000^{x+10} = 10^{x^2+69}$.

27. _____ $6! - 5! =$

28. _____ Find the area of a triangle with side lengths 13, 13, and 24.

29. _____ Jonathan decides to visit the village of Brimwater, which has a population of 86,789 and has a thriving marketplace. While he's there, he buys 17 beef jerky sticks for $2.99 each, a total of 60 extra rounds for his sidearm at about $6.69 per round, two souvenirs which cost $12.60 each, and a new speeder engine for $100, which weighs about a ton. Now, how many pounds are in a ton?

30. _____ $77983 - 29518 =$

31. _____ $1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 11 + 13 + 14 + 15 =$

32. _____ Dr. Brita Scanners can read people's minds at a rate of 4 minds per minute. How many hours will it take for her to read all of the minds in a park filled with 144 people, excluding herself?

33. _____ Find the coefficient of the $x^3 y^2$ term in $(x + 2y)^5$.

34. _____ Which natural number is neither prime nor composite?

35. _____ Find the products of the x-intercepts for $y = 3x^2 + 22x + 35$.

36. _____ Find $\dfrac{\cos(420°)}{\sin(30°)}$.

37. _____ 1 is 20% of 87.5% of 50% of x. What is x?

38. _____ Find the lateral surface area of a cone with diameter 12 and height 8.

39. _____ What is the probability that Jenny will pick the ace of hearts from a standard deck of cards?

40. _____ $3 - 2 =$