For all questions, answer choice (E) NOTA means that none of the given answers is correct. Good Luck!

1. Evaluate $(5 - 2)^3 + 18 \div 3 - 12$.
   (A) 18   (B) 25   (C) 21   (D) 12   (E) NOTA

2. What is 50% of 35% of 60?
   (A) 19.5   (B) 10.5   (C) 39   (D) 21   (E) NOTA

3. If $f(x) = 3x + 5$, find $f(2) - f(-5)$.
   (A) 1   (B) -7   (C) 21   (D) 4   (E) NOTA

4. If you see on the news that there is a 70% chance of rain tomorrow, how would you represent this percentage as a fraction?
   (A) $\dfrac{6}{7}$ (B) $\dfrac{7}{10}$ (C) $\dfrac{4}{5}$ (D) $\dfrac{1}{2}$ (E) NOTA

5. Solve for h: $5h + 6 = 31$.
   (A) 5   (B) 3   (C) 6   (D) 2   (E) NOTA

6. The sum of 8 consecutive numbers is 100. What is the sum of the 3rd and 6th numbers?
   (A) 20   (B) 25   (C) 18   (D) 28   (E) NOTA

7. If a circle has an area of 36π inches^2, what is its diameter in inches?
   (A) 6   (B) 12   (C) 36   (D) 4   (E) NOTA

8. Meit has won 2 out of his first 10 tennis games for the year. If he plays 30 games total in a school year, how many more games does he need to win in order to have 60% win rate for the year?
   (A) 16   (B) 12   (C) 5   (D) 20   (E) NOTA

9. Rida bought 5 apples and 1 pineapple for 3.25. Jasmine only likes pineapples, so she bought 6 of them for $4.50. Whats the total cost of 2 apples and 3 pineapples?
   (A) $3.25   (B) $4   (C) $2.75   (D) $3   (E) NOTA

10. Expand $(x + 4)(x - 2)$.
    (A) $x^2 - 2x + 8$ (B) $x^2 + 2x - 8$ (C) $x^2 - 4x - 6$ (D) $x^2 - 8x + 2$ (E) NOTA

11. Solve for x: $\sqrt{x} + \sqrt{x + 15} = 5\sqrt{3}$
    (A) 4   (B) 9   (C) 12   (D) 20   (E) NOTA

12. Rick sells tricycles (three wheels) and bicycles (two wheels). He has 40 total vehicles to sell, and there are 105 wheels total on all of the vehicles. How many bicycles does he have?
    (A) 20   (B) 25   (C) 15   (D) 30   (E) NOTA

13. If Rithik can paint a house in 48 hours, and Kyle can paint a house in 16 hours, how long will it take to paint a house when both of them work together?
    (A) 12 hours   (B) 15 hours   (C) 13 hours   (D) $\dfrac{24}{7}$ hours   (E) NOTA

For questions 14 and 15, use the following information

RJ is going to a math competition and needs to pick out a matching pair of socks. He has 8 red socks, 6 blue socks, 10 green socks, and 7 yellow socks (the last one was eaten by the washing machine monster).

14. How many socks does he need to take to ensure a matching pair?

    (A) 2   (B) 7   (C) 3   (D) 4   (E) NOTA

15. If RJ picks randomly without replacing his socks, whats the chance he will get his first green sock on his 2nd try?

    (A) $\dfrac{10}{30}$ (B) $\dfrac{5}{18}$ (C) $\dfrac{7}{31}$ (D) $\dfrac{17}{5}$ (E) NOTA

16. Rohith and Bokey live on a Cartesian plane and want to get together for their weekly meeting. Their meeting place is at the point (0,0). Rohith lives at (-3,4) and Bokey lives at (12,5). How far do they have to walk in total, assuming they walk the shortest distance possible?

    (A) 18   (B) 8   (C) 5   (D) 13   (E) NOTA

17. A is inversely proportional to B, while directly proportional to C squared. When B = 3 and C = 2, A = 4. What would A be if B = 5 and C = 3?

    (A) $\dfrac{10}{9}$ (B) $\dfrac{15}{8}$ (C) $\dfrac{5}{27}$ (D) $\dfrac{27}{5}$ (E) NOTA

18. What is the units digit of 8^{2015}?

    (A) 8   (B) 4   (C) 2   (D) 6   (E) NOTA

19. Joe is baking cookies. He bakes cookies at a rate of 24 in an hour. How many cookies will he bake if he has 2 hours and 30 minutes?

    (A) 50   (B) 48   (C) 72   (D) 60   (E) NOTA

20. There is a triangle with angles 40° and 70°. What is the degree measure of the last angle?

    (A) 70°   (B) 50°   (C) 80°   (D) 100°   (E) NOTA

21. Rohith and Bokey want to meet up again! However, this time Rohith is located at the point (3,4) and Bokey is at the point (9,40). Before Rohith goes to Bokey, he must first go to a white picket fence located along the line y = -5. What is the shortest distance he would have to travel to get to Bokey?

    (A) $\sqrt{1332}$ (B) $\sqrt{2437}$ (C) 49   (D) 72   (E) NOTA

22. RJ needs your help again! He has found some matching socks, but now he needs help with the entire outfit. He has 4 different shirts, 6 different pairs of pants, and 3 different hats he can wear (he already has his socks picked out). How many different outfits can he make, if one outfit consists of 1 shirt, 1 pair of pants, and 1 hat?

    (A) 13   (B) 30   (C) 72   (D) 40   (E) NOTA

23. Lisa is going shopping for purses. She wants a purse that has a retail price of $75, but she has a coupon for 40% off. With tax, the total is $47.25. What is the tax rate?

    (A) 5%   (B) 5.75%   (C) 7.5%   (D) 10%   (E) NOTA

24. How many distinct positive factors does 1386 have?

    (A) 4   (B) 5   (C) 12   (D) 24   (E) NOTA

25. Anvitha gets out of class at 2:45. What is the smallest angle formed by the minute and hour hand at this time? (Answers are in degrees)

    (A) 63.5   (B) 84.5   (C) 172.5   (D) 187.5   (E) NOTA

26. Let $x\phi y = \dfrac{x^2 - 3y^3}{2x}$. Find the value of $\{(6\phi 2)\phi(-1)\} + 6$.

    (A) -1   (B) 1   (C) 6   (D) 8   (E) NOTA

27. Shardul is leveling up his character in a video game. In order to get from level x to level $x + 1$, you must gain $x^3 - 4x^2 + 2x + 4$ experience points. How many experience points do you need to go from level 5 to 8? Assume Shardul has just reached level 5 with no points to spare, and wants to get to level 8 with no points to spare.

    (A) 300   (B) 456   (C) 123   (D) 292   (E) NOTA

28. Two trains are 300 miles apart and are moving toward each other. One of the trains is moving at 20mph and the other is going at 40mph. A super fly that can fly 70mph starts at the front of one train and flies back and forth between the two trains as they move toward each other. How far does the fly travel before the two trains meet?

    (A) 300   (B) 325   (C) 350   (D) 400   (E) NOTA

29. What is the nature of the roots of the equation $x^2 + 6x + 7 = 0$?

    (A) two distinct imaginary roots   (B) one distinct real root
    (C) two distinct real roots   (D) Not enough information   (E) NOTA

30. Find the sum of the squares of the roots of $x^2 - 6x - 2 = 0$?

    (A) 34   (B) 36   (C) 38   (D) Not enough information   (E) NOTA